

DEPARTMENT OF THE NAVY
FISCAL YEAR (FY) 2000/2001 BIENNIAL BUDGET
ESTIMATES



JUSTIFICATION OF ESTIMATES
FEBRUARY 1999

AIRCRAFT PROCUREMENT, NAVY
Volume II:
BUDGET ACTIVITY 5

UNCLASSIFIED

Department of the Navy

FY 2000/2001 Procurement Program

Exhibit P-1

APPROPRIATION: 1506N Aircraft Procurement, Navy

DATE: February 1999

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 2000 UNIT COST	TOA, \$ IN MILLIONS								S E C
				-----FY 1998-----		-----FY 1999-----		-----FY 2000-----		-----FY 2001-----		
				QUANTITY	COST	QUANTITY	COST	QUANTITY	COST	QUANTITY	COST	
BUDGET ACTIVITY 05: Modification of Aircraft												

Modification of Aircraft												
22	0511 EA-6 Series	A			112.5		95.2		161.0		195.3	U
23	0514 AV-8 Series	A			24.6		78.0		39.1		40.1	U
24	0519 F-14 Series	A			275.4		214.4		83.4		38.3	U
25	0522 Adversary	A			.1		.*		-		.1	U
26	0523 ES-3 Series	A			5.0		-		-		-	U
27	0525 F-18 Series	A			143.9		194.9		308.8		285.6	U
28	0526 H-46 Series	A			33.4		31.6		17.9		13.6	U
29	0527 AH-1W Series	A			35.4		27.8		13.7		9.9	U
30	0528 H-53 Series	A			34.7		37.4		45.2		30.0	U
31	0530 SH-60 Series	A			71.1		137.1		56.8		20.3	U
32	0532 H-1 Series	A			19.7		26.1		6.3		.3	U
33	0534 H-3 Series	A			3.3		.*		.*		.*	U
34	0537 EP-3 Series	A			5.5		7.4		27.4		26.1	U
35	0538 P-3 Series	A			225.3		286.0		276.2		142.6	U
36	0541 S-3 Series	A			51.4		45.5		94.1		63.0	U
37	0544 E-2 Series	A			43.3		83.6		28.2		26.9	U
38	0549 Trainer A/C Series	A			9.0		7.4		8.9		12.2	U

* ITEMS UNDER \$50,000

UNCLASSIFIED

UNCLASSIFIED

Department of the Navy

FY 2000/2001 Procurement Program

Exhibit P-1

APPROPRIATION: 1506N Aircraft Procurement, Navy

DATE: February 1999

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS)	TOA, \$ IN MILLIONS								S E C
			FY 2000 UNIT COST	-----FY 1998----- QUANTITY COST	-----FY 1999----- QUANTITY COST	-----FY 2000----- QUANTITY COST	-----FY 2001----- QUANTITY COST					
39	0556 C-2A	A			20.4	17.8		19.5		7.2	U	
40	0560 C-130 Series	A			20.3	4.0		15.3		8.0	U	
41	0561 FEWSG	A			.5	.6		.6		.6	U	
42	0562 Cargo/Transport A/C Series	A			24.9	27.1		16.4		8.1	U	
43	0564 E-6 Series	A			88.5	64.2		87.0		78.3	U	
44	0566 Executive Helicopters Series	A			20.2	26.7		12.8		7.0	U	
45	0567 Special Project Aircraft	A			22.8	20.3		28.8		4.2	U	
46	0569 T-45 Series	A			5.3	8.5		9.7		9.8	U	
47	0570 Power Plant Changes	A			17.3	15.2		15.6		15.7	U	
48	0576 Common ECM Equipment	A			31.4	36.8		50.6		67.6	U	
49	0577 Common Avionics Changes	A			127.6	100.9		81.6		82.1	U	
TOTAL Modification of Aircraft					1,472.8	1,594.4		1,505.0		1,193.2		

* ITEMS UNDER \$50,000

UNCLASSIFIED

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Department of the Navy

FY 2000/2001 Procurement Program - Reserve Component

Exhibit P-1R

APPROPRIATION: 1506N Aircraft Procurement, Navy

DATE: February 1999

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 2000 UNIT COST	TOA, \$ IN MILLIONS								
				-----FY 1998-----		-----FY 1999-----		-----FY 2000-----		-----FY 2001-----		
				QUANTITY	COST	QUANTITY	COST	QUANTITY	COST	QUANTITY	COST	S E C
BUDGET ACTIVITY 05: Modification of Aircraft												

Modification of Aircraft												
2	0519 F-14 Series(RESERVE)	A			-		.2		.*			- U
3	0522 Adversary(RESERVE)	A			.1		-		-			- U
4	0525 F-18 Series(RESERVE)	A			26.5		6.1		7.1		3.1	U
5	0526 H-46 Series(RESERVE)	A			2.0		1.7		.5		.2	U
6	0527 AH-1W Series(RESERVE)	A			.5		-		-			- U
7	0528 H-53 Series(RESERVE)	A			.3		2.3		.2		1.2	U
8	0532 H-1 Series(RESERVE)	A			1.7		2.3		.5			- U
9	0534 H-3 Series(RESERVE)	A			.1		-		.*		.*	U
10	0538 P-3 Series(RESERVE)	A			3.4		6.5		-			- U
11	0560 C-130 Series(RESERVE)	A			3.7		1.2		2.7		2.0	U
12	0562 Cargo/Transport A/C Series(RE A				20.2		21.3		13.6		1.1	U
TOTAL Modification of Aircraft					58.5		41.7		24.6		7.6	

* ITEMS UNDER \$50,000

UNCLASSIFIED

Aircraft Procurement, Navy
Program and Financing (in Thousands of dollars)

Budget Plan (amounts for PROCUREMENT
actions programed)

Identification code	17-1506-0-1-051	1998 actual	1999 est.	2000 est.	2001 est.

Program by activities:					
Direct program:					
00.0101	Combat aircraft	3,666,192	4,263,383	4,614,610	4,852,020
00.0201	Airlift aircraft	29,684	137,226	331,314	331,931
00.0301	Trainer aircraft	282,570	300,158	379,854	398,547
00.0401	Other aircraft	117,143	112,072	12,257	4,799
00.0501	Modification of aircraft	1,473,529	1,594,404	1,504,977	1,193,151
00.0601	Aircraft spares and repair parts	676,710	734,016	871,820	858,349
00.0701	Aircraft support equipment and facilities	342,386	365,098	513,823	372,083
		-----	-----	-----	-----
00.9101	Total direct program	6,588,214	7,506,357	8,228,655	8,010,880
01.0101	Reimbursable program	645	7,100	7,100	7,100
		-----	-----	-----	-----
10.0001	Total	6,588,859	7,513,457	8,235,755	8,017,980

Financing:					
Offsetting collections from:					
11.0001	Federal funds(-)	-645	-7,100	-7,100	-7,100
17.0001	Recovery of prior year obligations				
Unobligated balance available, start of year:					
21.4002	For completion of prior year budget plans				
21.4003	Available to finance new budget plans	-29,200			
21.4009	Reprogramming from/to prior year budget plans	-10,785			
Unobligated balance available, end of year:					
24.4002	For completion of prior year budget plans				
25.0001	Unobligated balance expiring	10,785			
		-----	-----	-----	-----
39.0001	Budget authority	6,559,014	7,506,357	8,228,655	8,010,880

Budget authority:					
40.0001	Appropriation	6,506,244	7,519,709	8,228,655	8,010,880
40.1501	Appropriation (emergency)	272,500			
40.7601	Reduction pursuant to P.L. 105-56 (-), 8041	-118,293			
41.0001	Transferred to other accounts (-)	-102,977	-13,352		
42.0001	Transferred from other accounts	1,540			
		-----	-----	-----	-----
43.0001	Appropriation (adjusted)	6,559,014	7,506,357	8,228,655	8,010,880

Aircraft Procurement, Navy
Program and Financing (in Thousands of dollars)

Obligations

Identification code	17-1506-0-1-051	1998 actual	1999 est.	2000 est.	2001 est.

Program by activities:					
Direct program:					
00.0101	Combat aircraft	3,940,615	3,722,295	4,238,565	4,775,206
00.0201	Airlift aircraft	8,753	125,891	281,089	318,209
00.0301	Trainer aircraft	333,586	257,612	342,828	388,854
00.0401	Other aircraft	132,547	95,747	26,573	13,428
00.0501	Modification of aircraft	1,661,628	1,493,805	1,439,302	1,268,011
00.0601	Aircraft spares and repair parts	695,027	575,533	790,446	851,667
00.0701	Aircraft support equipment and facilities	366,310	307,118	457,049	392,854
		-----	-----	-----	-----
00.9101	Total direct program	7,138,466	6,578,001	7,575,852	8,008,229
01.0101	Reimbursable program	6,737	7,700	7,145	7,100
		-----	-----	-----	-----
10.0001	Total	7,145,203	6,585,701	7,582,997	8,015,329

Financing:					
Offsetting collections from:					
11.0001	Federal funds(-)	-3,591	-7,100	-7,100	-7,100
17.0001	Recovery of prior year obligations	-25,496			
Unobligated balance available, start of year:					
21.4002	For completion of prior year budget plans	-1,295,981	-757,294	-1,685,050	-2,337,808
21.4003	Available to finance new budget plans	-29,200			
21.4009	Reprogramming from/to prior year budget plans				
Unobligated balance available, end of year:					
24.4002	For completion of prior year budget plans	757,294	1,685,050	2,337,808	2,340,459
25.0001	Unobligated balance expiring	10,785			
		-----	-----	-----	-----
39.0001	Budget authority	6,559,014	7,506,357	8,228,655	8,010,880

Budget authority:					
40.0001	Appropriation	6,506,244	7,519,709	8,228,655	8,010,880
40.1501	Appropriation (emergency)	272,500			
40.7601	Reduction pursuant to P.L. 105-56 (-), 8041	-118,293			
41.0001	Transferred to other accounts (-)	-102,977	-13,352		
42.0001	Transferred from other accounts	1,540			
		-----	-----	-----	-----
43.0001	Appropriation (adjusted)	6,559,014	7,506,357	8,228,655	8,010,880

Aircraft Procurement, Navy
 Program and Financing (in Thousands of dollars)

Obligations

Identification code	17-1506-0-1-051	1998 actual	1999 est.	2000 est.	2001 est.

Relation of obligations to outlays:					
71.0001	Obligations incurred	7,141,612	6,578,601	7,575,897	8,008,229
72.1001	From Federal sources: Receivables and unpaid, unfilled orders, SOY	9,194	1,808	1,808	1,808
72.4001	Obligated balance, start of year	7,927,332	9,066,831	9,045,439	9,495,143
74.1001	From Federal sources: Receivables and unpaid, unfilled orders, EOY	-1,808	-1,808	-1,808	-1,808
74.4001	Obligated balance, end of year	-9,066,831	-9,045,439	-9,495,143	-9,948,267
77.0001	Adjustments in expired accounts (net)	-138,715			
78.0001	Adjustments in unexpired accounts	-25,496			

90.0001	Outlays (net)	5,845,287	6,599,993	7,126,193	7,555,105

Aircraft Procurement, Navy
Object Classification (in Thousands of dollars)

Identification code	17-1506-0-1-051	1998 actual	1999 est.	2000 est.	2001 est.

	Direct obligations:				
125.101	Advisory and assistance services	96,932	99,594	105,319	101,865
	Purchases goods/services from Government accounts				
125.303	Purchases from revolving funds	516,783	411,403	389,063	331,425
126.001	Supplies and materials	373,578	323,766	216,775	219,119
131.001	Equipment	6,151,173	5,743,238	6,864,695	7,355,820
		-----	-----	-----	-----
199.001	Total Direct obligations	7,138,466	6,578,001	7,575,852	8,008,229
	Reimbursable obligations:				
231.001	Equipment	6,737	7,700	7,145	7,100
		-----	-----	-----	-----
299.001	Total Reimbursable obligations	6,737	7,700	7,145	7,100
		-----	-----	-----	-----
999.901	Total obligations	7,145,203	6,585,701	7,582,997	8,015,329

**COMPARISON OF FY 1998 PROGRAM REQUIREMENTS AS REFLECTED IN FY 1999 PRESIDENT'S BUDGET
WITH FY 1998 PROGRAM REQUIREMENTS SHOWN IN FY 2000 PRESIDENT'S BUDGET**

(In Thousands of Dollars)

	<u>Total Program Requirements per FY 1999 Budget</u>	<u>Total Program Requirements per FY 2000 Budget</u>	<u>Increase (+) or Decrease (-)</u>
Combat Aircraft	\$ 3,391,481	3,666,192	\$ +274,711
Airlift Aircraft.....	29,684	29,684	
Trainer Aircraft	284,673	282,570	-2,103
Other Aircraft.....	117,143	117,143	
Modification of Aircraft.....	1,468,478	1,473,529	+5,051
Aircraft Spares and Repair Parts.....	663,364	676,710	+13,346
Aircraft Support Equipment and Facilities	332,706	342,386	+9,680
Reimbursable Program.....	<u>7,100</u>	<u>645</u>	<u>-6,455</u>
TOTAL FISCAL YEAR PROGRAM.....	\$ 6,294,629	\$ 6,588,859	\$+294,230

EXPLANATION BY BUDGET ACTIVITY (B. A.)

Combat Aircraft (+\$274.711 million):

Major changes in this budget activity include the DOD Supplemental for F-18 C/D for procurement of 8 aircraft (+\$272.5 million); an unrealized reprogramming, that had been anticipated in the FY 1999 President's Budget submission, from the F/A-18 E/F aircraft program to RDT&E appropriation (+\$26 million); a reduction to the F/A-18 E/F aircraft program for the FY 1998 Military Personnel, Navy reprogramming (-\$14.855

million); a BTR from P-3 Series to V-22 aircraft to fund target to ceiling costs on prime contract (+6.886 million); a BTR from AV-8 Series to the AV-8 aircraft program to fund critical support shortfalls (+\$7.2 million); and multiple below threshold reprogrammings (BTRs) to execute current program requirements (-\$23.02 million).

Trainer Aircraft (-\$2.103 million)

Minor adjustments in this budget activity include a realignment from T-45TS Trainer to Other Production Changes for Government Furnished Equipment Support (-\$.189 million), a BTR from T-45TS Trainer aircraft program to the Trainer Aircraft Series program for the CT-39G modification program for GPS (-\$1.35 million) and various other slight adjustments to effectively accomplish planned program objectives (-\$.564 million).

Modification of Aircraft (+\$5.051 million):

Major changes in this budget activity are the following adjustments for unrealized offsets, that had been anticipated in the FY 1999 President's Budget, for the FY 1998 Military Personnel, Navy reprogramming: AH-1W Series (+\$11 million), H-1 Series (+\$2 million), and F-18 Series (+\$6 million); a reduction to the Common Avionics program for the FY 1998 Military Personnel, Navy reprogramming (-\$3.5 million); a transfer for Counter Drug Interdiction support (+\$1.54 million); a BTR from AV-8 Series to the AV-8 aircraft program to fund critical support shortfalls (-\$7.2 million); a BTR from P-3 Series to V-22 aircraft to fund target to ceiling costs on prime contract (-\$6.886 million) and multiple minor BTR actions to effectively execute program requirements (+\$2.097 million).

Spares (+\$13.346 million):

Changes in this budget activity are a BTR action from various other budget activities to fund Aviation Outfitting shortfalls (+\$11.508 million); and several BTR actions to effectively execute current program requirements including internal realignments within the Spares account to fund AOA shortfalls, E-6A requirements, and P-3 AIP spares requirements (+\$1.838 million).

Aircraft Support Equipment and Facilities (+\$9.68 million):

Changes in this budget activity are several BTR actions to fund First Destination Transportation Charges (+\$3 million); various BTR actions to fund Canceled Account Adjustments (+\$7.481 million); and several BTR actions to execute current requirements (-\$.801 million).

Reimbursable Program (-\$6.455 million):

Actual reimbursable program collections are less than were anticipated in the budget plan.

**COMPARISON OF FY 1998 FINANCING AS REFLECTED IN FY 1999 PRESIDENT'S BUDGET
WITH FY 1998 FINANCING SHOWN IN FY 2000 PRESIDENT'S BUDGET**

(In Thousands of Dollars)

	<u>Financing per FY 1999 Budget</u>	<u>Financing per FY 2000 Budget</u>	<u>Increase (+) or Decrease (-)</u>
Program Requirements (Total)	6,294,629	6,588,859	+294,230
Program Requirements (Service account)	6,287,529	6,588,214	+300,685
Program Requirements (Reimbursable).....	7,100	645	-6,455
Less:			
Anticipated Reimbursements	7,100	645	+6,455
Available to finance new budget plans	24,000	29,200	-5,200
Unobligated balance expiring		10,785	-10,785
Transferred from other account		1,540	-1,540
Appropriation (emergency)		272,500	-272,500
Add:			
Transferred to other accounts	129,622	102,977	-26,645
Appropriation Rescinded (unoblig. balance) ..	24,000		-24,000
Reduction pursuant P.L. 105-56	118,293	118,293	
Reprogrammings from/to prior year budgets .		10,785	+10,785
Appropriation	6,535,444	6,506,244	-29,200

EXPLANATION OF CHANGES IN FINANCING

The change in program financing of \$294,230,000 is due to increased program account needs (+\$300,685,000) explained previously plus fewer actual orders than anticipated in the reimbursable account (-\$6,455,000).

Financing changes reduce the appropriation by the new amount of -\$29,200,000. Financing adjustments include transfers of -\$26,645,000, -\$24,000,000 relating to unobligated balances, and +\$10,785,000 for reprogrammings associated with prior year budget plans. These were offset by +\$6,455,000 anticipated reimbursables, -\$5,200,000 funds to finance new budget plans, -\$10,785,000 unobligated balances expiring, -\$1,540,000 transferred from other accounts, and -\$272,500,000 for an emergency supplemental appropriation.

**COMPARISON OF FY 1999 PROGRAM REQUIREMENTS AS REFLECTED IN FY 1999 PRESIDENT'S BIENNIAL BUDGET
WITH FY 1999 PROGRAM REQUIREMENTS SHOWN IN FY 2000 PRESIDENT'S BUDGET**

(In Thousands of Dollars)

	<u>Total Program Requirements per FY 1999 Budget</u>	<u>Total Program Requirements per FY 2000 Budget</u>	<u>Increase (+) or Decrease (-)</u>
Combat Aircraft	\$ 4,289,737	\$ 4,263,383	\$ -26,354
Airlift Aircraft.....	132,187	137,226	+5,039
Trainer Aircraft	342,826	300,158	-42,668
Other Aircraft.....	0	112,072	+112,072
Modification of Aircraft.....	1,594,602	1,594,404	-198
Aircraft Spares and Repair Parts.....	727,838	734,016	+ 6,178
Aircraft Support Equipment and Facilities	379,544	365,098	- 14,446
Reimbursable Program.....	<u>7,100</u>	<u>7,100</u>	<u>-</u>
TOTAL FISCAL YEAR PROGRAM.....	\$7,473,834	\$ 7,513,457	\$+ 39,623

EXPLANATION BY BUDGET ACTIVITY

Combat Aircraft (-\$26.354 million):

Major changes in this budget activity include Congressional action to reduce the AV-8B (VSTOL) Harrier aircraft program (-\$3.2 million) and the F/A-18 E/F (Fighter) Hornet program (-\$15 million); the following Congressional reductions: Revised Economic Assumptions (-\$12.445 million) and Advisory and Assistance Services (-\$5.209 million); and a BTR action from the E-2C modification program to the E-2C aircraft program for a propeller engineering change proposal (+\$9.5 million).

Airlift Aircraft (+\$5.039 million):

Major changes in this budget activity include Congressional action only to procure 1 CH-60 helicopter (+\$19 million); the following Congressional reductions: Revised Economic Assumptions (-\$.44 million), and Advisory and Assistance Services (-\$.169 million); and a reprogramming from the CH-60 helicopter aircraft program to the CH-60 Research, Development, Test and Evaluation (RDT&E) program within the RDT&E appropriation (-\$13.352 million).

Trainer Aircraft (-\$42.668 million):

Major changes in this budget activity include Congressional action to increase T-45TS Trainer aircraft funding (+\$10.9 million) and reduce the T-45TS Advanced Procurement program due to disapproval of the Multiyear acquisition strategy (-\$52.159 million); and the following Congressional reductions: Revised Economic Assumptions (-\$.878 million), and Advisory and Assistance Services (-\$.531 million).

Other Aircraft (+\$112.072 million):

Major changes in this budget activity include Congressional action to procure 2 KC-130J aircraft for the Marine Corps (\$112.4 million); and a Congressional reduction for Revised Economic Assumptions (-\$.328 million).

Modification of Aircraft (-\$.198 million)

Major changes in this budget activity include Congressional action to the following modification programs: Common Avionics Changes (-\$2 million), AH-1 Series (+\$.5.5 million), H-1 Series (+\$8 million), AV-8 Series (-\$12.6 million), P-3 Series (\$23 million), EP-3 Series (+\$2 million), ES-3 Series (-\$5.172 million), EA-6 Series (+\$20 million), E-2 Series (+\$2 million), F-14 Series (-\$7.3 million), F-18 Series (-\$3.9 million), and Common ECM Equipment (-\$.3 million); the following Congressional reductions: Revised Economic Assumptions (-\$4.72 million), and Advisory and Assistance Services (-\$6.906 million); a BTR action from E-2C Series to the E-2C aircraft program (-\$9.5 million); and a few BTRs within this budget activity to meet current program requirements.

Aircraft Spares and Repair Parts (+\$6.178 million):

Changes in this budget activity consist of a Congressional reduction for Revised Economic Assumptions (-\$2.122 million); and a few BTRs within this budget activity to meet current program requirements.

Aircraft Support Equipment and Facilities (-\$14.446 million):

Major changes in this budget activity include the following Congressional actions: a reduction to Common Ground Equipment (-\$9 million); a reduction from the Aircraft Industrial Facilities (-\$1.8 million) and the following Congressional reductions: Revised Economic Assumptions (-\$1.067 million), and Advisory and Assistance Services (-\$2.579 million).

**COMPARISON OF FY 1999 FINANCING AS REFLECTED IN FY 1999 BIENNIAL BUDGET
WITH FY 1999 FINANCING SHOWN IN FY 2000 PRESIDENT'S BUDGET**

(In Thousands of Dollars)

	Financing per FY 1999 <u>Budget</u>	Financing per FY 2000 <u>Budget</u>	Increase (+) or <u>Decrease (-)</u>
Program Requirements (Total)	7,473,834	7,513,457	+39,623
Program Requirements (Service account)	7,466,734	7,506,357	+39,623
Program Requirements (Reimbursable)	7,100	7,100	
Less:			
Anticipated Reimbursements	7,100	7,100	
Add:			
Transferred to other accounts	<u> </u>	<u>13,352</u>	<u>+13,352</u>
Appropriation	7,466,734	7,519,709	+52,975

EXPLANATION OF CHANGES IN FINANCING

The change in program requirements of \$39,623,000 is the result of specific Congressional increases of \$226,200,000 and specific reductions of -\$135,831,000 which were offset by Congressionally directed decreases for Revised Economic Assumptions (-\$22,000,000), Advisory and Assistance Services (-\$15,394,000), and a Departmental reprogramming of (-\$13,352,000), as previously explained.

A financing change increases the appropriation to the new amount of \$52,975,000. The only financing adjustment is a transfer of \$13,352,000.

AIRCRAFT PROCUREMENT, NAVY

For construction, procurement, production, modification and modernization of aircraft, equipment, including ordnance, spare parts, and accessories therefore; specialized equipment; expansion of public and private plants, including the land necessary therefore, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title; and procurement and installation of equipment, appliances, and machine tools in public and private plants; reserve plant and Government and contractor-owned equipment layaway; \$8,228,655,000 to remain available for obligation until September 30, 2002.

FINANCING

FY 2000 budget plan of \$8,228,655,000 for the Aircraft Procurement, Navy appropriation is to be financed by new obligational authority.

Exhibit P-40, BUDGET ITEM JUSTIFICATION										DATE: February 1999			
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications								P-1 ITEM NOMENCLATURE EA-6 Series Modifications					
Program Element for Code B Items:								Other Related Program Elements					
	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
QTY													
COST (In Millions)	678.3	A	218.0	112.5	95.1	161.0	195.3	210.3	162.3	155.6	137.9	957.5	3,083.8
<p>This line item funds modifications to the EA-6 aircraft. The EA-6B Prowler is a four-seat derivative of the A-6 Intruder medium attack aircraft. Among its features are a computer controlled electronic surveillance and control system and high power jamming transmitters in various frequency bands which are contained in pods mounted externally on the five aircraft pylons. The overall goal of the modifications budgeted in FY 00 is the procurement of a Universal Exciter Upgrade, Low Band Transmitters and Block 89A upgrade kits. OSIP 1-01 is funded in FY01 for acquisition of ICAP III training system and in FY02 to start production of the ICAP III aircraft.</p>													
(TOA, \$ in Millions)													
<u>OSIP No.</u>	<u>Description</u>	<u>Prior Years</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To Complete</u>	<u>Total</u>
19-79	ALQ-99 PODS	306.9	106.8	48.4	52.6	32.4	54.8	19.4	13.1	12.4	12.6	154.8	814.1
32-85	EA-6B Structural Improvements	196.8	79.9	37.5	5.4	60.4	45.6	45.5	45.4	45.0	46.4	61.2	669.1
111-87	J-52 Engines		5.0										5.0
42-93	EA-6B Block 89A Avionics	174.6	26.3	26.6	37.1	68.3	77.9	70.3	36.2	11.5		62.3	591.1
1-01	ICAP III						17.0	75.0	67.5	86.7	79.0	679.3	1,004.5
Total		678.3	218.0	112.5	95.1	161.0	195.3	210.3	162.3	155.6	137.9	957.5	3,083.8
Note: Totals may not add due to rounding.													

Exhibit P-3a	Individual Modification
MODIFICATION TITLE:	<u>ALQ-99 PODS (OSIP 19-79)</u>
MODELS OF SYSTEMS AFFECTED:	<u>EA-6B Series Modifications</u>
DESCRIPTION/JUSTIFICATION:	TYPE MODIFICATION: <u>Reliability/Mission Capability</u>
<p>BAND 9/10 TRANSMITTER: The Band 9/10 Transmitter (Band 9/10) provides the EA-6B an expanded jamming capability against the target tracking/fire control radars of modern Integrated Air Defense Systems. Reliability and maintainability are also greatly improved over that of current ALQ-99 Transmitters. Following a competitive acquisition, Engineering and Manufacturing Development of the Bd 9/10 was initiated in Jan 92. Until Aug 95, the program was conducted as a joint Air Force/Navy program, with the Air Force acting as lead service. In Aug 95, the Air Force transferred program responsibility to the Navy. Through conduct of Developmental and Operational Testing, the Bd 9/10 was shown to meet or exceed the operational requirements specified in OPNAV/N88 Itr Ser No. N880C3/5U663298 of 28 AUG 95. These test results, combined with satisfaction of other exit criteria, permitted a Nov 97 Milestone III approval for full rate production. Contract options for production of 120 Bd 9/10's exercised at that time, will result in deliveries between Jul 99 and Jul 01. Accomplishment of Initial Operational Capability is anticipated in Sep 99. The Band 9/10 inventory objective is 196. ALQ-99 Transmitters are Weapons Replaceable Assemblies that are readily removed and installed in the ALQ-99 Pod, thus no installation effort/funding is associated with this program. This capability will be available for the total of 124 EA-6B aircraft, which includes four Naval Air Reserve aircraft. This requirement does not apply to the National Guard.</p>	
<p>MODIFIED BAND 9/10 TRANSMITTER (BAND 7/8) The modified Band 9/10 Transmitter (Band 7/8) provides the EA-6B an ability to counter threat radar electronic protection techniques installed in widely exported threat systems in the Band 7/8 frequency range. Congressional funding plus-up in FY 99 was received that specified modification of Band 9/10 Transmitters to work in lower frequencies. A sole source contract is being sought for an Engineering Change Proposal to the band 9/10 Transmitter and the production of eight band 7/8 Transmitters (modified 9/10 transmitters). After the Band 7/8 transmitter's effectiveness is validated, it is expected the Band 7/8 Transmitters produced will support single squadron deployments beginning in 2nd QTR FY03. Band 7/8 operational requirements are specified in OPNAV/N88 Itr Ser No. N880C3/8U658735 of 4 JAN 99. ALQ-99 Transmitters are Weapons Replaceable Assemblies that are readily removed and installed in the ALQ-99 Pod, thus no installation effort/funding is associated with this program. This capability is intended for all Block 89A and ICAP III configuration EA-6B aircraft, including Naval Air Reserve aircraft. This requirement does not apply to the National Guard.</p>	
<p>EXTENDED HIGH BAND RADOME Modification of the ALQ-99 Extended High Band Radome (EHBR) is required for compatibility with the Band 9/10 Transmitter (Band 9/10). This modification involves the replacement of sections of the radome composite structure that are damaged by impinging energy radiated by the Band 9/10. No other changes to EHBR performance, reliability or maintainability result. Following a competitive acquisition, the modification effort was initiated in Nov 97. Production deliveries will begin in May 99 and complete in Jan 02. Currently, the full inventory is for 250 EHBRs. ALQ-99 Radomes are Weapons Replaceable Assemblies that are readily removed and installed in the ALQ-99 Pod, thus no installation effort/funding is associated with this program. This capability will be available for the total of 124 EA-6B aircraft, which includes four Naval Air Reserve aircraft. This requirement does not apply to the National Guard. The EHBR modification is not addressed in any operational requirement document.</p>	
<p>LOW BAND TRANSMITTER The Low Band Transmitter (LBT) will provide the EA-6B with an expanded jamming capability against the Early Warning/Acquisition Radars and Communication Links of modern Integrated Air Defense Systems. Reliability and maintainability will also be greatly improved over that of current ALQ-99 Transmitters. Following a competitive acquisition and Milestone II approval, Engineering and Manufacturing Development was initiated in Sep 97. Critical Design Review was conditionally approved in Dec 97; however, a follow-up review to close out action items was completed in Nov 98. Testing to date has consisted of prototype testing conducted at government and contractor facilities. This testing has successfully demonstrated the key performance parameters identified in OPNAV/N88 Itr Ser No. N880C3/6S663399 of 26 JUL 96 can be attained by the present design. Fabrication of Engineering Development Models (EDMs) will occur begin in Apr 2000. EDMs will be used for contractor and Navy testing required to support Milestone III approval, currently anticipated in Dec 01. The LBT inventory objective is 180. ALQ-99 Transmitters are Weapons Replaceable Assemblies that are readily removed and installed in the ALQ-99 Pod, thus no installation effort/funding is associated with this program. This capability will be available for the total PAA of 124 aircraft, which includes four Naval Air Reserve aircraft. This requirement does not apply to the National Guard.</p>	
<p>UNIVERSAL EXCITER UPGRADE The Universal Exciter Upgrade (UEU) provides a 100% improvement in reliability over that of the current Universal Exciter (UE / MTBF = 125 hrs). Increased maintainability, elimination of multiple configurations and performance improvements are additional improvements. ORD #474-88-97 defines the UEU requirements. The UEU entered Engineering and Manufacturing Development in 1991 and achieved Milestone III approval for full rate production in Apr 96. A contract for 119 UEUs was awarded in Sep 96. Follow-on procurements are in-process/planned for fiscal years 98-02, which will bring total UEU procurements up to 405. The modification of UEs to UEUs is accomplished via "turn key" sole source contract. Initial UEU delivery occurred in Jun 98, which allows for an Initial Operational Capability in Apr 99. With the planned follow-on procurements, deliveries will continue out into 2003. ALQ-99 Exciters are Weapons Replaceable Assemblies that are readily removed and installed in the ALQ-99 Pod, thus no installation effort/funding is associated with this program. This capability will be available for the total PAA of 124 aircraft, which includes four Naval Air Reserve aircraft. This requirement does not apply to the National Guard.</p>	
<p>AN/ALQ-99 POD HARDBACK/EMI UPGRADE The ALQ-99 Pod Hardback (HDBK) is being upgraded to effect reliability and maintainability improvements, to incorporate design improvements that will prevent pod shutdown from Electromagnetic Interference (EMI) and to provide interface compatibility with the Universal Exciter Upgrade, the Band 9/10 Transmitter and the Low Band Transmitter. Annual cost avoidance to the Fleet have been estimated at \$638k. Following approval of Engineering Change Proposal No.s AV-91-023 and AV-91-024B1, incorporation of these improvements was initiated in 1992. To date, over 410 modified HDBKs have been delivered to the fleet. Completion of the inventory objective of 430 modified HDBKs is anticipated in Apr 99. This capability will be available for the total of 124 EA-6B aircraft, which includes four Naval Air Reserve aircraft. This requirement does not apply to the National Guard. The HDBK modification is not addressed in any operational requirement document.</p>	
<p>TRANSMITTER COOLANT MODIFICATION EA-6B/ALQ-99 Transmitters and support equipment currently use Coolanol for the dielectric coolant required to dissipate heat from and prevent arcing of high voltage power supplies. Coolanol costs over \$300/gallon, is a known carcinogen and must be handled as a hazardous material. Given that the EA-6B is the sole remaining user of Coolanol 35, its future availability is in doubt. The replacement coolant for Coolanol is Polyalphaolefin (PAO), which costs less than \$25/gallon and is non-hazardous. PAO is widely used by other U.S. military platforms and systems. Additionally, the equipment has to be converted in order to be compatible with the Consolidated Automated Support System (CASS) High Power Device Test Set (HPDTS) modification. HPDTS will allow CASS to test ALQ-99 Transmitters, thereby eliminating the requirements for the EA-6B peculiar Transmitter Test Station (TTS). This transition from the TTS to the CASS is expected to begin in Dec 00. The cooling system of the HPDTS only supports PAO, thus all units tested with it must use PAO as their coolant. ALQ-99 Transmitters require modification in order to utilize PAO, because the polymer-based material currently used as high voltage lead insulation and wire harness identification markers dissolve when exposed to PAO. This material must be replaced with an improved material that through testing has been identified to be impervious to PAO. ECP AV-97-038 delineates the efforts requires to modify Transmitters to a PAO compatible configuration. 1180 Transmitters and 1400 high voltage power supply modules will be modified via a "turn key" program, conducted by a government/contractor field modification team.</p>	

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Delivery of UEU Engineering Design Models (EDMs) began in the first quarter of FY-95 with developmental and operational testing completed in the second quarter of FY-96 achieving approval for full production, milestone III in March 1996 and followed by a production contract award. A development contract for the low band transmitter was awarded in September 1996 with testing expected to begin in the third quarter of FY 2001 and AFP expected in the first quarter of FY-02.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
RDT&E																										
PROCUREMENT																										
Installation Kits																										
Installation Kits N/R																										
Installation Equipment	1,397	141.9																						1,397	141.9	
Hardback/Pod EMI Equip	845	13.4	246	1.1																				1,091	14.4	
Band 9/10 Transmitter Equip	26	14.7	99	49.7																				125	64.4	
Universal Exciter Upgrade	125	58.4	8	3.7	84	35.7	58	24.5	43	18.0	75	32.4	12	5.2									75	36.5	480	214.4
MOD BAND 9/10 (BAND 7/8)							8	16.0																8	16.0	
Lowband Transmitter											9	9.1	14	12.0	14	12.0	13	11.2	13	11.4	117	117.9	180	173.6		
PAO Transmitter Mod							186	1.2	262	1.6	686	4.5											52	0.4	1,186	7.6
BAND 9/10 RADOME	250	3.8																						250	3.8	
Installation Equipment N/R		4.8		0.3		2.0																				7.1
Engineering Change Orders																										
Data		9.3		*				0.2		0.3																10.2
Training Equipment		*		1.1		0.5						0.3														1.8
Support Equipment		35.3		40.6		5.0		2.5		7.9		5.5														96.9
ILS		2.1		0.3				0.2		0.1		0.3		0.2		0.2										3.3
Other Support		10.5		5.7		3.2		5.9		1.9		2.5		2.1		1.0					1.2					35.3
Interim Contractor Support																										
Installation Cost	757	12.7	311	4.2	148	1.9	115	2.2	109	2.4														1,440	23.4	
Total Procurement		306.9		106.8		48.4		52.6		32.4		54.8		19.4		13.1		12.4		12.6		154.8			814.1	

- Notes:
1. Totals may not add due to rounding Install costs are greater than attached exhibits, as this includes RIM
 2. Asterisk indicates amount less than \$50K Install schedules not provided for equipment that fits into the POD without structural modification (ie LBT, also install is included in proc cost)

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: UEU-ECP# AV-95-031 MODIFICATION TITLE: EA-6B Series (OSIP 19-79)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Turn-key [Cost included in procurement price]

ADMINISTRATIVE LEADTIME: 8 Months PRODUCTION LEADTIME: 16 Months

CONTRACT DATES: FY 1998: Sep-98 FY 1999: May-99 FY 2000: May-00

DELIVERY DATE: FY 1998: Oct-99 FY 1999: Sep-00 FY 2000: Sep-01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1998 & PY (217) kits	125		8		84																			217		
FY 1999 (58) kits							58																		58	
FY 2000 (43) kits									43																	43
FY 2001 (75) kits											75															75
FY 2002 (12) kits													12													12
FY 2003 () kits																										
FY 2004 () kits																										
FY 2005 () kits																										
To Complete (75) kits																							75		75	
TOTAL	125		8		84		58		43		75		12									75		480		

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	8		2	10	25	27	30	27	27	27	22	15	15	15	12	12	11	9	13	18	18	19	18		
Out	8			2	10	25	25	27	30	27	27	27	22	15	15	15	12	12	11	9	13	18	18	19	18

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In									75	480
Out									75	480

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: Hardback/POD EMI (ECP AV-91-023/024R1) MODIFICATION TITLE: EA-6B Series (OSIP 19-79)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Organic (NSWC, Crane)

ADMINISTRATIVE LEADTIME: 9 Months PRODUCTION LEADTIME: 13 Months

CONTRACT DATES: FY 1998: _____ FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (430) kits	290	6.2	100	2.4	40	1.0																		430	9.6
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	290	6.2	100	2.4	40	1.0																		430	9.6

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	267	37	39	45	42																				
Out	250	17	37	39	45	42																			

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										430
Out										430

Hardback/POD EMI installed concurrently, counted both pieces as one installation. Fleet inventory requirement reduced to 430 (3/98)

Exhibit P-3a
 MODELS OF SYSTEMS AFFECTED: EA-6B Series Mod MODIFICATION TITLE: Transmitter Coolant Modification Polyalphaolefin (PAO)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Turn-Key

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 1 Months

CONTRACT DATES: FY 1998: _____ FY 1999: Jan-99 FY 2000: Jan-00

DELIVERY DATE: FY 1998: _____ FY 1999: Feb-99 FY 2000: Feb-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 (186) kits							186																		186
FY 2000 (262) kits									262																262
FY 2001 (686) kits										686															686
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete (52) kits																						52		52	
TOTAL								186		262			686									52		1,186	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In						46	47	47	46	65	66	65	66	138	137	137	137	137	137						
Out						38	47	47	46	65	66	65	66	138	137	137	137	137	137	8					

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In									52	1186
Out									52	1186

Exhibit P-3a Individual Modification

MODIFICATION TITLE: EA-6B Structural Improvements (OSIP 32-85)

MODELS OF SYSTEMS AFFECTED: EA-6 Series Modifications TYPE MODIFICATION: Safety of Flight

DESCRIPTION/JUSTIFICATION: This Omnibus Operational and Safety Improvement Program covers EA-6B Structural modifications and EA-6B peculiar avionics modifications arising from test/deficiencies and those safety of flight related improvements. Included are Structural Improvement modifications which includes fixes for areas found to be deficient during aircraft fatigue test; Wing Center Sections (WCS) which replace wings which have either cracked due to stress corrosion or have reached their wing fatigue life limit; Electronic Flight Information Systems (EFIS) which corrects the fleet's number one safety issue for the EA-6B; GPS/MAGR which installs Global Positioning Satellite capability into the EA-6B for the first time and fulfills the DOD requirements to have GPS capability installed into all Navy, Marine Corps and Coast Guard Aircraft by October 2000; Structural Data Recording System (SDRS) which will provide a more accurate measurement of Fatigue Life Expenditure (FLE); the Joint Mission Planner which provides for the maintenance of the current EA-6B mission planning system (TEAMS) and its subsequent migration to TAMPs. This OSIP also includes the Connectivity and USQ-113 progr
Connectivity: (ECP AV-97-036) The purpose of this ECP is to provide the system which will allow the EA-6B to receive intelligence broadcasts into the cockpit via the Multi-mission Advanced Tactical Terminal (MATT) and to transmit and receive data via the Improved Data Modem (IDM) to and from other IDM equipped platforms. Aircraft wiring kits (A-kits) have been procured for the 124 aircraft in the EA-6B inventory. A total of 54 MATT/IDM systems (B-kits) have been procured and will be "cross-decked" among the 124 aircraft. Installations were to be at the Organizational level, however, because of the number of hours to install the system, the installations will now be performed by a contractor modification team. Installs are scheduled for 54 in FY99, 54 in FY00 and 9 in FY01. For test purposes and validation/verification efforts seven systems have been installed in FY98. The MATT/IDM is addressed under the EA-6B ORD (#474-88-97). The purpose of **ECP319R1** is to install an ARC-182 radio as a 3rd radio in Block 82 aircraft and to upgrade the ARC-159 (UHF) radio to the ARC-182 (UHF/VHF) radio in the 3rd radio position of Block 89 aircraft. The addition of the ARC-182 radio will improve the performance capability of the Block 82 and 89 aircraft by adding a combination UHF/VHF radio as a replacement for a UHF only radio. This ECP will be required to achieve full operating compat of the MATT/IDM system. A total of 70 radios will be procured.
USQ-113: (AFCs 665 and 760) The purpose of these AFCs is to install the basic installation provisions for the USQ-113 system (665) and to install the needed Electromagnetic Interference provisions for the aircraft (760) Five installs are planned for FY99 by a field modification team. The remainder of the installations will occur in conjunction with SDLM. The AFCs must be in place prior to the installation of AFC793 which installs the USQ-113 (V)3 system. AFC 793: The purpose of this AFC is to install the USQ-113 (V)3 Radio Countermeasures Set into the aircraft. The USQ-113 (V)3 system is an upgrade of the USQ-113(V)2 Phase I system and provides improved mission capability for the EA-6B aircraft. Aircraft wiring kits (A-kits) will be procured for 124 aircraft and 63 USQ-113 systems (B-kits) will be procured and will be crossdecked among the 124 aircraft. Installations of the USQ-113 (V)3system will occur at the Organizational level. The USQ-113 is addressed under the EA-6B ORD (#474-88-97)

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:
 The EFIS system proof of concept was completed the first quarter of FY 1995. The aircraft prototype installation design was completed the third quarter of FY 1995 and installation kit validation and verification was completed second quarter of FY 1996. The GPS/MAGR is in full rate production as a joint program (Air Force Lead). The manufacturer is Rockwell Collins. Other platforms with GPS/MAGR installed include C-2, H-60 and E-2.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
RDT&E																										
PROCUREMENT																										
Installation Kits	2,745	36.0																						2,745	36.0	
Structures Improvements Kits			250	0.2																				250	0.2	
Connectivity Kit			125	2.8																				125	2.8	
Band 10 Receiver Kits	106	0.6	21	0.2																				127	0.9	
SDRS Kit					4	0.1	26	0.4	51	0.8	43	0.7												124	1.9	
Installation Kits N/R		13.1		0.9		0.5																			14.6	
Installation Equipment	963	17.9																						963	17.9	
Wing Center Section Equip	16	54.4	10	30.1	5	20.6			15	55.3	9	34.0	9	32.4	9	33.1	9	33.5	9	34.8	6	24.2			97	352.4
AN/USQ-113 Equip	161	16.5	24	9.7	9	3.9																		194	30.1	
Mini Airborne Tactical Terminal Equip			54	8.6																				54	8.6	
Improved Data Modem (IDM) Equip			54	1.9																				54	1.9	
ARC-210 Radio (USQ-113)			48	1.7	18	0.6																		66	2.3	
ARC-182 Radio Equip			36	0.2			34	0.2																	70	0.4
SATCOM Antenna Equip			125	0.3																					125	0.3
Connectivity- Remote Fill Device Equip			125	0.1																					125	0.1
Conn-Laptop Controllers Equip			108	1.4																					108	1.4
Operational Tester Equip			3	0.5																				3	0.5	
Installation Equipment N/R		3.4		2.2		2.6				1.5		1.5														11.3
Engineering Change Orders																										
Data		9.2		0.9		0.4		0.1				0.2														10.8
Training Equipment		1.4				1.2																			2.6	
Support Equipment		5.2										0.1													5.3	
ILS		1.2		*								0.4													1.6	
Other Support		20.4		4.6		5.3		3.8		2.2		0.9		1.1		0.2		0.3		0.4		0.8			39.9	
Interim Contractor Support																										
Installation Cost		17.3	99	13.4	36	2.3	63	0.9	71	0.6	81	7.8	10	12.0	10	12.1	9	11.2	9	11.2	28	36.2			416	125.1
Total Procurement		196.8		79.9		37.5		5.4		60.4		45.6		45.5		45.4		45.0		46.4		61.2			669.1	

- Notes:
 1. Totals may not add due to rounding
 2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: EA-6B MODIFICATION TITLE: Center Wing Section (OSIP 32-85)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Turn-key for FY97 Procurement. Commercial & Organic installs FY98 and out.

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 28 Months

CONTRACT DATES: FY 1998: Aug-98 FY 1999: _____ FY 2000: Nov-99

DELIVERY DATE: FY 1998: Jan-01 FY 1999: _____ FY 2000: Mar-02

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1998 & PY (31) kits	16	16.6	10	10.5							5	7.1												31	34.2	
FY 1999 () kits																										
FY 2000 (15) kits													10	12.0	5	6.0									15	18.0
FY 2001 (9) kits															5	6.0	4	4.9							9	10.9
FY 2002 (9) kits																	5	6.3	4	4.9					9	11.2
FY 2003 (9) kits																			5	6.3	4	5.2			9	11.5
FY 2004 (9) kits																					9	11.5			9	11.5
FY 2005 (9) kits																					9	11.5			9	11.5
To Complete (6) kits																					6	8.0			6	8.0
TOTAL	16	16.6	10	10.5							5	7.1	10	12.0	10	12.0	9	11.2	9	11.2	9	11.2	28	36.2	97	116.8

Installation Schedule

FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	6	1	1	1	4	3		3	4	3					3	2			1	5	4	5	1	2	2
Out	6			1	1	1	4	3		3	4	3					3	2		1	5	4	5	1	2

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	3	2	2	2	3	2	2	2	28	97
Out	2	2	3	2	2	2	3	2	32	97

*FY98-00 installs result from FY97 & prior turn-key procurement

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: EA-6B BLOCK 82 & 89 AIRCRAFT MODIFICATION TITLE: ARC 182 RADIOS (Structural and Avionics Sys Improv- OSIP 32-85) [ECP 319A1]

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: CONTRACTOR MOD TEAM

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 9 Months

CONTRACT DATES: FY 1998: Sep-98 FY 1999: Nov-99 FY 2000: _____

DELIVERY DATE: FY 1998: Jun-99 FY 1999: May-00 FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1998 & PY (36) kits							9	0.0	27	0.1														36	0.2	
FY 1999 (26) kits **									9	0.0	17	0.1													26	0.1
FY 2000 () kits																										
FY 2001 () kits																										
FY 2002 () kits																										
FY 2003 () kits																										
FY 2004 () kits																										
FY 2005 () kits																										
To Complete () kits																										
TOTAL								9	0.0	36	0.2	17	0.1											62	0.3	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In									9	9	9	9	9	9	8										
Out									9	9	9	9	9	9	8										

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										62
Out										62

** 70 Proc , 8 units to be used/installed for Trainers/test

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: EA-6B Aircraft MODIFICATION TITLE: SDRS KITS (OSIP 32-85)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Mod Team/Organic

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 5 Months

CONTRACT DATES: FY 1998: Sep-98 FY 1999: Jan-99 FY 2000: Nov-99

DELIVERY DATE: FY 1998: Feb-99 FY 1999: Jun-99 FY 2000: Mar-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (4) kits							4	0.0																4	0.0
FY 1999 (26) kits							26	0.3																26	0.3
FY 2000 (51) kits									35	0.4	16	0.2												51	0.5
FY 2001 (43) kits											43	0.4												43	0.4
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL							30	0.3	35	0.4	59	0.6											124	1.2	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In						4	4	22		7	14	14	16	8	17	18									
Out						4	2	14	10	5	15	15	15	9	14	14	7								

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										124
Out										124

Exhibit P-3a Individual Modification

MODIFICATION TITLE: J-52 Engines (OSIP 111-87)

MODELS OF SYSTEMS AFFECTED: EA-6B Series Modification TYPE MODIFICATION: Safety of Flight

DESCRIPTION/JUSTIFICATION: J-52 Improved Turbine Exhaust Case (TEC). Based on historical data analysis the J52 P408A will experience six uncontained turbine blade fractures resulting in the loss of three aircraft before the retirement of the EA-6B. To reduce this risk a Component Improvement program study was undertaken, the result of which is an improved turbine exhaust case that provides Low Pressure Turbine (LPT) containment and other durability improvements. The LPT TECs will be replaced on an attrition basis, incurring no additional installation costs. The current LPT TEC is also the highest cost driver on the J52 P408A, a factor that will also be remedied by the improved TEC.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Development of the Improved Turbine Exhaust Case began in FY95 using engine CIP and contractor funds. Testing and ECP approval was completed in the first quarter of FY98 (OCT 97), followed by a production contract award.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
XXX Kit			40	4.1																				40	4.1
XXX Kit																									
Installation Kits N/R				0.4																					0.4
Installation Equipment																									
XXX Equip																									
Installation Equipment N/R																									
Engineering Change Orders																									
XXX Kit ECO XXX																									
XXX Equip ECO XXX																									
Data				0.1																					0.1
Training Equipment																									
Support Equipment				0.3																					0.3
ILS				0.1																					0.1
Other Support				0.1																					0.1
Interim Contractor Support																									
Installation Cost																									
Total Procurement				5.0																					5.0

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Block 89A Avionics (OSIP 42-93)

MODELS OF SYSTEMS AFFECTED: EA-6 Series Modifications TYPE MODIFICATION: Safety of Flight/ Reliability

DESCRIPTION/JUSTIFICATION:
 This omnibus Operational and Safety Improvement Program covers EA-6B ICAP II Block 89 Avionics systems modifications to install required communications, navigation, and miniaturized technology improvements. Block 82 aircraft will be baselined to the Block 89 configuration for incorporation of these improvements providing one configuration of EA-6B aircraft reducing support costs. The avionics common systems upgrade includes incorporation of: (1) AN/ARC-210 VHF/UHF radios having SINGARS and HAVEQUICK modes for inter-operability with Air Force, ground, and NATO forces. (2) The Embedded GPS Inertial Navigation System (EGI) providing a closely coupled GPS-INS solution and replacing the ASN-50 AHRS which has very poor reliability. (3) Full integration of the Electronic Instrumentation System (EFIS), Control Display Navigation Unit (CDNU), and Digital Signal Converter (DSDC), which were installed as part of AFC778-779. This OSIP provides for upgrade of the DSDC for use in Block 89A. The DSDC functions as an interface unit for the EFIS and is connected to the 1553 Navigation data bus to provide additional navigation data to the aircrew. (4) The AYK-14 computer will be upgraded with Very High Speed Integrated Circuit Technology (VHSIC) improving processing, memory, and throughput. The upgraded computer (CP-2357) will retain the outer form factor of the current computer and incorporate a new backplane that supports the new VHSIC processor Module and provides VME-bus expansion slots. Discrete and Serial Modules (DSM) replace the Serial Interface Module-A (SIM-A) cards. (5) Mission Planning System: The AN/TSQ-142 Mission Planner provides operational flight program loading, maps, EW libraries, jammer techniques, HARM data, and performs data reduction. Modifications to the AN/TSQ-142 are required to support the Block-89A upgrade, and to support transition of EA-6B mission planning to TAMPs. 6. Block 82 to 89 Upgrade: 20 Block 82 aircraft will be upgraded to the Block 89 standard configuration by adding the fire extinguishing system, fuel discharge improvements, yaw rate indicator, ARC-182 and ARC-199 radios, additional caution lights, tailpipe improvements, antenna disconnect ad ICS improvements, and a Computer Interface Unit/Encoder (CIU/E). (7) Misc. Avionics: Additional miscellaneous procurements of avionics, such as ARC-199 Radios and CIU/E units are required as part of both the Block-89A and Block-82/89 upgrades.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

The ARC-210 UHF/VHF radio is a common avionics system to be installed in all Navy aircraft, and has undergone OPEVAL on the F-18, UH-1, and other platforms. The EA-6B has been approved for installation. The EFIS system was installed and tested in FY 1996 in the ICAP-II aircraft and will require minimal upgrade FOT&E for the required interface and incorporation of EGI data. The EGI is common avionics with the F-18 EGI and has been extensively flight tested in that platform. The AYK-14 (XN-*) computer utilizes modules that are common avionics to Navy inventory, and a chassis similar to current XN-4. The similarity and commonality of the upgraded AYK-14 will require little additional qualification testing. DT began on the Block -89A system in FY-98, with an intensive integrated Test and Evaluation period. OT is scheduled to conclude March 1999. Testing of software, upgraded avionics, including some regression testing of existing functionality, and testing of the mission planning system will be performed during the DT/OT tests.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Block 82 to 89	20	59.5																					20	59.5	
Block 82 to 89A kit							3	5.3	12	22.0	12	22.0	12	21.6	7	12.8							46	83.7	
Block 89 to 89A Kit					9	6.8	14	8.5	8	5.6	8	5.8									35	28.0	74	54.7	
Installation Kits N/R	8	48.1		3.4		3.1				1.7													8	56.3	
Installation Equipment	60	3.0																					60	3.0	
Block 82 to 89 Equip	20	1.6																					20	1.6	
Block 82 to 89A Equip							3	0.9	12	3.7	12	3.8	12	3.9	7	2.5							46	14.8	
Block 89 to 89A					9	*	14	*	8	*	8	*									35	0.1	74	0.3	
EGI	4	0.8			9		17		20		20		12		7						35		124	0.8	
ARC-210 Equip	6	0.5			18		34		40		40		24		14						70		246	0.5	
AN/AYK-14	4	0.5	2	0.2	9	0.9	17	1.8	20	2.1	20	2.2	12	1.3	7	0.8					35	3.2	126	12.9	
CIU/Encoder * See Note 3	26	6.9					3		12	5.4	12	4.7	12	2.4	7								72	19.4	
Installation Equipment N/R	2	3.0								0.9													2	3.9	
Engineering Change Orders																									
Data		5.9				1.1		0.6							0.1			0.3						7.9	
Training Equipment		4.6		5.9		1.7		0.2																12.4	
Support Equipment		3.3		9.3		2.6		6.1		5.3		5.8		5.8										38.3	
ILS		0.3		0.2		0.1		0.2		3.6		3.7		3.5		0.1		0.2						11.9	
Other Support		32.6		7.3		10.2		7.3		8.1		8.3		10.5		2.3		0.6						87.3	
Interim Contractor Support																									
Installation Cost	20	4.2	2	*		*	18	5.2	34	10.8	40	21.7	40	21.2	24	17.6	14	10.4			49	31.0	241	122.1	
Total Procurement		174.6		26.3		26.6		37.1		68.3		77.9		70.3		36.2		11.5				62.3		591.1	

- Notes:
1. Totals may not add due to rounding
 2. Asterisk indicates amount less than \$50K
 3. CIU/Es (FY02 & 03) some will be made available from ICAP III Modification Line
 4. Included in the 'Other Support' line, for FY's 00-02, is funding for HARM Block VI Upgrade engineering efforts.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: EA-6B Series ICAP Block 89A Update MODIFICATION TITLE: Block 89 Avionics System Improvement (OSIP 42-93)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Commercial

ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 1998: Apr-98 FY 1999: Mar-99 FY 2000: Mar-00

DELIVERY DATE: FY 1998: Apr-99 FY 1999: Mar-00 FY 2000: Mar-01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 1998 & PY (13) kits**	4	34.2					9	5.2															13	39.4
FY 1999 (17) kits									17	10.8													17	10.8
FY 2000 (20) kits											20	21.7											20	21.7
FY 2001 (20) kits													20	21.2									20	21.2
FY 2002 (12) kits															12	17.6							12	17.6
FY 2003 (7) kits																	7	10.5					7	10.5
FY 2004 () kits																								
FY 2005 () kits																								
To Complete (35) kits																						35		
TOTAL	4	34.2					9	5.2	17	10.8	20	21.7	20	21.2	12	17.6	7	10.5				35	124	121.2

** (4 PY) Validation/Verification Kits (Install Kit N/R)

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	4					1	3	3	2	2	4	5	6	2	6	6	6	2	6	6	6	2	3	4	3
Out	2	1	1							1	3	3		2	2	4	5	6	2	6	6	6	2	6	6

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	3	3	1						35	124
Out	6	2	3	4	3	3	3	1	35	124

A/C inducted four months ahead of delivery, as this is done concurrent with SDLM, and teardown and partial SDLM must be completed before kit installation

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: EA-6B Series Block 82-89 Update MODIFICATION TITLE: Block 89 Avionics System Improvement (OSIP 42-93)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor-Turnkey (Cost included in procurement price)

ADMINISTRATIVE LEADTIME: _____ Months PRODUCTION LEADTIME: _____ Months

CONTRACT DATES: FY 1998: _____ FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (20) kits	6		2		4		8																	20	
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	6		2		4		8																	20	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	8		2	1	1	2	4	2																		
Out					1	5	3	2		3	4	2														

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										20
Out										20

Exhibit P-40, BUDGET ITEM JUSTIFICATION								DATE: February 1999					
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications								P-1 ITEM NOMENCLATURE AV-8B Series Modifications					
Program Element for Code B Items:								Other Related Program Elements					
	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
QUANTITY		A											
COST (In Millions)	83.9	A	21.9	24.6	86.3	39.1	40.1	58.1	37.1	31.4	30.5	66.1	519.3
<p>This line item funds modifications to AV-8B aircraft. The AV-8B is a single engine, single crewmember aircraft capable of vertical/short take-off and landing (V/STOL) operations. The AV-8B meets the Marine Corps requirements for a light attack aircraft to provide responsive offensive air power that can operate austere forward bases in direct support of ground forces. The overall goal of the modifications budgeted in FY 2000 is to include incorporation of improved digital communications with the addition of the Automatic Target Hand-Off System; incorporation of the ARC-210 radio which provides UHF capability for CV based TACAIR, VHF FM for close air support and maritime channels; completion of structure safety improvements in a new stabilator center section; replacement of power cable MIL-W-81381 wire with MIL-W-22759 wire; and continued incorporation of Operational and Safety improvements to the aircraft.</p> <p>The AV-8B inventory (30 June 1998) consists of 4 major configurations: 19 two-seat TAV-8B aircraft, 79 DAY-Attack aircraft, 52 NIGHT-Attack Aircraft, and 37 Night-Attack-RADAR aircraft.</p> <p>In addition there are 14 undelivered aircraft that are in the Remanufacture process. The production (Remanufacture) program reduces the Day-Attack inventory by approximately 1 aircraft per month and increases the Night-Attack-Radar aircraft inventory by approximately 1 aircraft per month. Retrofit quantities of each ECP depend on the aircraft configuration type and if & when the change was introduced into production.</p>													
(TOA, \$ in Millions)													
OSIP No.	Description	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
1-91	Omnibus O&S Improvements	17.0	10.8	12.8	14.9	6.3	11.8	9.5	9.2	4.8	1.9	8.9	107.9
17-92	GPS	23.3	0.5	0.7	0.3								24.8
21-92	Auto. Target Hand-Off System	16.8	1.8	1.5	1.7	4.1	1.7	0.2					27.8
23-92	AN/ARC-210(V) EP Radio	3.7	0.2	2.7	1.4	3.0	1.6	0.9	0.7				14.1
34-93	Horizontal Stabilator Fatigue Impr.	15.0	1.3	0.9	0.9	0.5							18.6
16-94	Aircraft Life Extension Program	7.4	2.7	1.3									11.3
3-96	KAPTON Wire Replacement	0.8	4.7	4.7	0.1	7.2	5.1	2.4	1.8				26.7
23-99	Mission Planning				1.5	1.2	2.6	1.7	2.3				9.4
25-99	TAV-8B Performance Upgrade				65.4	14.9	15.3	14.1	1.3	0.5			111.4
18-00	SJU-4 Escape System Performance Upgrade					2.0	2.1	1.0					5.1
-02	JDAM							8.6	3.6	6.8	8.2	29.0	56.1
-02	Survivability & Vulnerability							19.6	18.2	19.3	20.4	28.3	105.9
TOTAL		83.9	21.9	24.6	86.3	39.1	40.1	58.1	37.1	31.4	30.5	66.1	519.3

Note: Totals may not add due to rounding.

MODIFICATION TITLE: OMNIBUS Operational & Safety Improvements (OSIP 1-91)

MODELS OF SYSTEM AFFECTED: TAV-8B, AV-8B Day, AV-8B Night, AV-8B Night/Radar

TYPE MODIFICATION: Safety

DESCRIPTION/JUSTIFICATION:

Each ECP description includes the AV-8B configuration affected by the change and, if applicable, when it was introduced into production.

ECP-217, Emergency Battery Backup provides electrical power to the landing gear in the event of a major power failure. TAV-8B, Day. **ECP-246**, Canopy Restraint incorporates an improved pyrotechnic device to provide separation to the pilot on ejection - TAV-8B. **ECP-248**, Power Lever Angle Unit (PLAU) provides critical in-flight engine control, is being relocated from the engine bay to the cockpit to reduce the failure rate - TAV-8B, Day, Night, and FY99 & prior Radar. **ECP-251**, Nose Wheel Steering (NWS), a Safety change, provides improved pilot control over nose wheel steering responsiveness for critical landing conditions - TAV-8B, Day, Night, FY96 & prior Radar. **ECP-254**, Inlet Guide Vane Controller (IGVC), a Safety change, provides improved -408 engine responsiveness during critical maneuvers - TAV-8B, Night, FY96 & prior Radar. **ECP-255R1**, Digital Flap Controller (DFC), a Safety change, provides improved flap control range and failure response during critical operations - TAV-8B, Day, Night, FY97 & prior Radar. **ECP-256**, Jet Pipe Temperature (JPT), a Safety change, eliminates the erroneous engine temperature returns - TAV-8B, Night, and FY96 & prior Radar. **ECP-257**, Digital Electronic Controller Unit (DECU), a Safety Change provides an improved power supply that corrects power interruptions during critical maneuvers - TAV-8B, Night, and FY96 & prior Radar. **ECP-269R1**, Frame 12, incorporates high vibration structural modifications to absorb increased vibrations which cause fatigue cracks - TAV-8B, Night & Radar. **ECP-271**, An improved mounting bracket for the 100% LERX structure reduces maintenance problems and improves readiness - Night, FY96 & prior Radar. **ECP-278**, installs more durable cables for the Radar Warning Radar system - Night, Radar. **C1.0 DSM** Modules, upgrades the AV-8B Mission Computer to a unified configuration - Day, Night, TAV-8B. **GEC-11**, adds a diode to the Cooling Engine Drive Electronics unit of the NAVFLIR, to prevent inadvertent shutdown due to power transients - Night & FY96 & prior Radar NAVFLIR units plus spares. **GEC-2**, High Performance Head Amplifier in to the NAVFLIR to prevent inadvertent shutdown due to power transients - NAVFLIRS installed Night plus spares. **L580**, improved exhaust ducting of the GTS/APU eliminates cracking problem and improved availability - TAV-8B, Day, Night & FY96 & prior Radar. **L-660**, upgrades the Protection Unit of the Gas Turbine Starter/Auxiliary Power Unit to prevent inadvertent system shutdowns during transient loads - all installed and spare GTS/APU units. **ECP-tbd**, replaces the radar warning receiver quadrant antennas with existing ALR-67 antennas for improved performance - Day, Night & Radar. **ECP-tbd**, integrates a Laser Spot Tracker to existing Navigation FLIR - Radar. **ECP-tbd**, replaces current arming solenoid with a Zero Retention Force solenoid to improve in-flight selectability and safe ordinance jettison - TAV-8B, Day, Night & Radar.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

NWS flight test completed Feb 98. NWS & IGVC V&V completed third quarter FY-98. DFC and JPT V&V completed second quarter FY-98. DECU V&V completed first quarter FY-98 and incorporation initiated. Initial design/V&V of ECP-217 was completed in 2nd quarter FY-90 and a replacement battery was identified in 3rd quarter FY-97 to allow final installations. ECP-246 V&V scheduled to complete 3rd quarter FY-99. ECP-248 Flight Test scheduled for 3rd quarter FY-99 and V&V scheduled for 4th quarter FY-99. ECP-269R1 design/V&V completion is scheduled for 1st quarter FY-01. ECP-271 design/V&V completion scheduled for 4th quarter FY-99. ECP-228 completed design/V&V in 4th quarter FY-91. Installation is to complete one remaining aircraft. ECP-199 completed design/V&V in 4th quarter FY-91. Installation reinitiated to complete modification program. ECP-278 design/V&V scheduled for 2nd quarter FY-99. L660 GTS/APU design was completed 2nd quarter FY-97 and rework initiated in 3rd quarter FY-97. L580 GTS/APU modification rework was completed in 4th quarter FY-97. GEC-11 modification was completed 4th quarter FY-97.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL					
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$				
RDT&E																												
PROCUREMENT																												
Installation Kits																												
ECP-217 (Emerg Battery) Kit	67	1.2																						67	1.2			
ECP-246 (TAV Canopy Restraint) Kit					19	0.1																			19	0.1		
ECP-248 (PLAU Resolver) Kit							28	0.7	54	1.2	54	1.3	23	0.5											159	3.7		
ECP-251 (NWS) Kit	4	0.1			24	1.0	39	1.7	9	0.4	36	1.8	8	0.4											120	5.5		
ECP-254 (IGVC) Kit	4				24	*	39	0.1	9	*	15	*	5	*												96	0.2	
ECP-255R1 (DFC) Kit			2	*	78	0.1	78	0.1																		158	0.2	
ECP-256 (JPT) Kit	139	*																								139	*	
ECP-257 (DECU) Kit	99	*					5	*	2	*	2	*	2	*												110	*	
ECP-269R1 (Frame 12) Kit											6	*	31	0.2	11	0.1										48	0.3	
ECP-271 (100%LERX) Kit			1		50	0.1																				51	0.1	
ECP-278 (RWR Cable) Kit					1	*	36	0.2	36	0.2	34	0.2														107	0.5	
C1.0 DSM Modules Kit	70	0.4	84	0.8																						154	1.2	
GEC-11 (CEDE Unit) Kit			181	0.1																						181	0.1	
GEC-002 (HPHA Unit) Kit			20	0.7	23	0.8																				43	1.5	
L580 (GTS/APU Duct) Kit				*																						0	*	
L660 (GTS/APU Protect Unit) Kit			74	0.2	144	0.7	111	0.5																		329	1.4	
ECP-tbd (ALR-67 Antennas)							178	0.8																		178	0.8	
PRIOR YEARS	525	8.0																								525	8.0	
Installation Kits N/R		2.0		0.1		1.3		1.7																				5.0
Installation Equipment																												
ECP-248 (PLAU) Equip							28	0.1	54	0.1	54	0.1	23	*												159	0.3	
ECP-255R1 (DFC) Equip			2	0.1	78	2.9	78	3.0																			158	6.0
ECP-254 (IGVC) Equip					27	2.2	39	3.3	9	0.8	15	1.3	5	0.4												95	8.1	
ECP-tbd (ALR-67 Antennas)							178	0.7																			178	0.7
ECP-tbd (NAVFLIR-LST)															17	3.3	21	4.1	9	1.8	39	7.9	86	17.0				
ECP-tbd (ZRF SOLENOID)															91	1.2	39	0.5								130	1.7	
Installation Equipment N/R																												
Engineering Change Orders																												
Data		1.5		0.3		0.6		0.7		*		*		0.3														3.3
Training Equipment		0.3		6.3		0.6		0.4		0.3		*																7.9
Support Equipment		1.8		0.4				0.2																				2.4
ILS						*		0.1																				0.1
Other Support		1.2		1.6		1.4		0.3		0.2		0.3		0.2														5.2
Interim Contractor Support																												
Installation Cost		0.5		0.1		1.0		0.6		3.0		6.7		7.3		4.7		0.2									1.0	25.2
TOTAL PROCUREMENT		17.0		10.8		12.8		14.9		6.3		11.8		9.5		9.2		4.8		1.9						8.9	107.9	

Notes:

1. Totals do not add due to rounding
2. Asterick indicates amount less than 50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: TAV-8B, AV-8B Day, AV-8B Night, AV-8B Night/Radar MODIFICATION TITLE: Operational & Safety Improvement Modifications

INSTALLATION INFORMATION: **This reflects multiple ECP installations begun in FY-94. Quantities will not match Kit Procurement line due to "O" Level Installs, Contractor Warranty Kits (ECP-271 & ECP-269R1) & piece part attrition upgrades.**

METHOD OF IMPLEMENTATION: Installation will be accomplished by Naval Aviation Depot drive in modification.

ADMINISTRATIVE LEADTIME: Multiple Months PRODUCTION LEADTIME: Multiple Months

CONTRACT DATES: FY 1998 Multiple FY 1999 Multiple FY 2000 Multiple

DELIVERY DATE: FY 1998 Multiple FY 1999 Multiple FY 2000 Multiple

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	1997	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1998 & PY (797) kits	510	0.5	16	*	84	0.4	164	0.4	11	0.5	12	0.5												797	2.4	
FY 1999 (100) kits									42	2.0	40	1.7	18	0.7											100	4.3
FY 2000 (98) kits									1	*	67	2.8	30	1.1											98	4.0
FY 2001 (114) kits											3	0.1	80	3.0	31	1.0									114	4.1
FY 2002 (69) kits													36	1.3	27	0.9	6	0.1							69	2.3
FY 2003 (97) kits															37	1.2	6	0.1	6	0.1	48	1.0			97	2.4
FY 2004 () kits																										
FY 2005 () kits																										
To Complete () kits																										
TOTAL	510	0.5	16	*	84	0.4	164	0.4	54	2.5	122	5.1	164	6.0	95	3.0	12	0.2	6	0.1	48	1.0		1275	19.5	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	526	20	20	24	20	21	50	51	42	0	15	11	28	28	32	34	28	33	42	44	45	26	31	23	15
Out	526	20	20	24	20	21	50	51	42	0	15	11	28	28	32	34	28	33	42	44	45	26	31	23	15

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	6						6		54	1275
Out	6						6		54	1275

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: TAV-8B, AV-8B Day, AV-8B Night, AV-8B Night/Radar MODIFICATION TITLE: Operational & Safety Improvement Modifications

INSTALLATION INFORMATION: This reflects multiple ECP installations begun in FY-94

METHOD OF IMPLEMENTATION: Installation will be accomplished by Naval Aviation Depot field mod teams.

ADMINISTRATIVE LEADTIME: _____ Multiple _____ Months PRODUCTION LEADTIME: _____ Multiple _____ Months

CONTRACT DATES: FY 1998 _____ Multiple FY 1999 _____ Multiple FY 2000 _____ Multiple

DELIVERY DATE: FY 1998 _____ Multiple FY 1999 _____ Multiple FY 2000 _____ Multiple

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	1997	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1998 & PY (123) kits	20	*	5	*	50	0.6	18	0.2	12	0.4	18	0.7												123	1.9	
FY 1999 (42) kits											24	0.9	18	0.7											42	1.6
FY 2000 (10) kits													10	0.4											10	0.4
FY 2001 (31) kits													6	0.2	25	1.6									31	1.8
FY 2002 (3) kits															3	0.1									3	0.1
FY 2003 () kits																										
FY 2004 () kits																										
FY 2005 () kits																										
To Complete () kits																										
TOTAL	20	*	5	*	50	0.6	18	0.2	12	0.4	42	1.6	34	1.3	28	1.7								209	5.8	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	25	8	15	13	14	9	9					12	12	8	10	12	8	10	10	6	10	9	7	2	
Out	25	8	15	13	14	9	9					12	12	8	10	12	8	10	10	6	10	9	7	2	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										209
Out										209

Exhibit P-3a

INDIVIDUAL MODIFICATION

MODIFICATION TITLE: GLOBAL POSITIONING SYSTEM (OSIP 17-92)

MODELS OF SYSTEM AFFECTED: TAV-8B, AV-8B Day, AV-8B Night, AV-8B Night/Radar

TYPE MODIFICATION: GPS

DESCRIPTION/JUSTIFICATION:

The directed incorporation of GPS on the AV-8B presented a significant challenge due to the paucity of available airframe space. This issue was resolved by removing the AN/ARN -118 and replacing it with the miniaturized airborne GPS receiver and the mini-TACAN. Incorporation of this modification (ECP-168) provides improved aircraft position location accuracy through use of GPS Satellite technology with a significant improvement in Close Air Support operational effectiveness due to precise target location and fire control solutions. Day and night operations worldwide amplify the need for a navigational system with a high degree of accuracy like the GPS. This modification was incorporated into production in FY97 and is being retrofitted into all TAV-8B, AV-8B Day, AV-8B Night and AV-8B Night/Radar (FY96 & prior) aircraft.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

The AN/APN-153 (Mini TACAN) is an NDI item put in production by USATRADOC during FY 1989. The Miniaturized Airborne GPS Receiver (MAGR) was a separately funded item. Development and Operational Testing are complete and GPS functions were included in the Night Attack Operational Flight Program (OFP) released in January 1995. The Day Attack/TAV-8B OFP was released in April 1997 and the Combined Radar/Night Attack OFP was also released in April 1997.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E Element #64214N		1.1																							1.1
PROCUREMENT																									
Installation Kits																									
ECP-168 (GPS) Kit	175	10.1																						175	10.1
Installation Kits N/R		1.5																							1.5
Installation Equipment																									
ECP-168 (GPS) Equip	175	4.9																						175	4.9
Installation Equipment N/R		2.1																							2.1
Engineering Change Orders																									
Data		0.2																							0.2
Training Equipment		0.3		*																					0.3
Support Equipment		0.4																							0.4
ILS		0.2																							0.2
Other Support		3.2																							3.2
Interim Contractor Support																									
Installation Cost	62	0.6	59	0.5	40	0.7	14	0.3																175	2.1
TOTAL PROCUREMENT		23.3		0.5		0.7		0.3																	24.8

Notes:

1. Totals do not add due to rounding
2. Asterick indicates amount less than 50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: TAV-8B, AV-8B Day, AV-8B Night, AV-8B Night/Radar MODIFICATION TITLE: GLOBAL POSITIONING SYSTEM (OSIP 17-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation will be accomplished by Naval Aviation Depot field mod teams.
NOTE: The MAGR is procured in Common Avionics OSIP 71-88.

ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 18 Months

CONTRACT DATES: FY 1999 _____ FY 2000 _____

DELIVERY DATE: FY 1999 _____ FY 2000 _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	1997	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (175) kits	62	0.6	59	0.5	40	0.7	14	0.3																175	2.1
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	62	0.6	59	0.5	40	0.7	14	0.3																175	2.1

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	121	13	15	6	6	11	3																			
Out	121	13	15	6	6	11	3																			

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In									0	175
Out									0	175

Exhibit P-3a **INDIVIDUAL MODIFICATION**

MODIFICATION TITLE: Automatic Target Hand-Off System (ATHS) (OSIP 21-92)

MODELS OF SYSTEM AFFECTED: AV-8B Night, AV-8B Night/Radar TYPE MODIFICATION: Upgrade

DESCRIPTION/JUSTIFICATION:

ECP-180 incorporates the ATHS, i.e., a digital data communications device which utilizes preformatted messages to communicate with standard USMC, USAF, and US Army digital communication devices. This modification supports improved performance in the areas of: (1) increased threat capabilities, (2) ground element transition to digital communications, (3) increased mission effectiveness and decreased pilot workload, (4) interoperability with USAF, USN, USMC, and US Army digital communication systems and (5) provide for eventual growth capability into voice activated crew station systems. This modification was introduced in production in FY97 and is being retrofitted in all AV-8B Night and AV-8B Night/Radar (FY96 & prior) aircraft.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

ATHS is currently installed in the US Army OH-58 and AH-64 Apache helicopters and has been in full production for several years. The ATHS was designed for MIL-E-5400, Class I, helicopter applications. Design of the modification required to bring ATHS up to Class II TACAIR standards and to increase the data rate is complete. Flight demonstration was conducted in an AV-8B in November 1990. Hardware qualification testing was completed in November 1994 and DT flight testing of the ATHS software algorithms was completed in December 1994. A FOFAC (Forward Observer Forward Air Controller) demonstration with MAWTS-1 (Marine Aviation Weapons & Tactics Squadron) occurred in February 1995. Preliminary operational testing was conducted in November 1995. Final DT/OT confirmed the software integration into the combined Night Attack & Radar Operational Flight Program released in June, 1997.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																								*	
PROCUREMENT																									
Installation Kits																									
ECP-180 (ATHS) Kit	21	1.2	22	0.9	20	0.7	12	0.4	15	0.5													90	3.8	
Installation Kits N/R		8.5																						8.5	
Installation Equipment																									
ECP-180 (ATHS) Equip	21	1.1	22	0.8	20	0.8	12	0.5	15	0.6													90	3.8	
Installation Equipment N/R		5.7																						5.7	
Engineering Change Orders																									
Data																									
Training Equipment		*																						*	
Support Equipment																									
ILS		*																						*	
Other Support																									
Interim Contractor Support																									
Installation Cost	11	0.2					12	0.9	41	2.9	23	1.7	3	0.2										90	5.9
TOTAL PROCUREMENT		16.8		1.8		1.5		1.7		4.1		1.7		0.2										27.8	

Notes:

- Totals do not add due to rounding
- Asterick indicates amount less than 50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: AV-8B Night, AV-8B Night/Radar MODIFICATION TITLE: Automatic Target Hand-Off System (ATHS) (OSIP 21-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation will be accomplished by Naval Aviation Depot by drive-in mod. Assumes concurrent installation with OSIP 23-92 (ARC-210)

ADMINISTRATIVE LEADTIME: 5 Months PRODUCTION LEADTIME: 17 Months

CONTRACT DATES: FY 1998 Dec-97 FY 1999 Mar-99 FY 2000 Mar-00

DELIVERY DATE: FY 1998 Feb-99 FY 1999 Aug-00 FY 2000 Aug-01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (27) kits	3	0.1					3	0.2	21	1.4														27	1.7
FY 1999 (7) kits									1	0.1	6	0.4												7	0.5
FY 2000 (6) kits											5	0.4	1	0.1										6	0.4
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	3	0.1					3	0.2	22	1.5	11	0.8	1	0.1									40	2.6	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	3							3		9	9	4	3	3	3	2	1								
Out	3							3		9	9	4	3	3	3	2	1								

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In									0	40
Out									0	40

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: AV-8B Night, AV-8B Night/Radar MODIFICATION TITLE: Automatic Target Hand-Off System (ATHS) (OSIP 21-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation will be accomplished by Naval Aviation Depot field modification team. Assumes concurrent installation with OSIP 23-92 (ARC-210)

ADMINISTRATIVE LEADTIME: 5 Months PRODUCTION LEADTIME: 17 Months

CONTRACT DATES: FY 1998 Dec-97 FY 1999 Mar-99 FY 2000 Mar-00

DELIVERY DATE: FY 1998 Feb-99 FY 1999 Aug-00 FY 2000 Aug-01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1998 & PY (36) kits	7	0.2					9	0.6	19	1.4	1	0.1												36	2.2	
FY 1999 (5) kits											5	0.4													5	0.4
FY 2000 (9) kits											6	0.4	3	0.2											9	0.7
FY 2001 () kits																										
FY 2002 () kits																										
FY 2003 () kits																										
FY 2004 () kits																										
FY 2005 () kits																										
To Complete () kits																										
TOTAL	7	0.2					9	0.6	19	1.4	12	0.9	3	0.2											50	3.3

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	7							3	6		9	9	1	3	3	3	3	2	1							
Out	7							3	6		9	9	1	3	3	3	3	2	1							

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In									0	50
Out									0	50

Exhibit P-3a **INDIVIDUAL MODIFICATION**

MODIFICATION TITLE: AN/ARC-210 Electronic Protection (EP) Combination Radio (OSIP 23-92)

MODELS OF SYSTEM AFFECTED: AV-8B Night, AV-8B Night/Radar TYPE MODIFICATION: Upgrade

DESCRIPTION/JUSTIFICATION:
 ECP-240 incorporates the AN/ARC-210, i.e., a combination UHF/VHF AM/FM jam-resistant radio developed as common avionics to allow for EP inter-operability with the Air Force, Army, and NATO, into the AV-8B. The radio provides dual UHF capability for CV based TACAIR; VHF FM for close air support and maritime channels; VHF AM for air traffic control; and EP capabilities using the Air Force developed waveforms (UHF-AM HAVEQUICK I and II), and the Army developed waveform (VHF-FM SINGGARS). The EP parameters and single channel preset information can be loaded via a CYZ-10 Data Transfer Device (DTD). The fill information can consist of word-of-day for HAVEQUICK and the KGV-10 transec variable, hopsets and frequency lock-out tables for SINGGARS. This modification was introduced in production in FY97 and is being retrofitted in all AV-8B Night and AV-8B Night/Radar (FY96 & prior) aircraft.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:
 The non-recurring engineering integration contract to MCAIR was awarded in June 1994. Demonstration/Validation began in February 1996 and was completed September 1996 in conjunction with the combined Night Attack/Radar Operational Flight Program (C1.0) released in May 1997. Incorporation of the ARC-210 HAVEQUICK and SINGGARS capability will be completed with the OC2.0 software release in FY 2002.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
ECP-240 (ARC-210) Kit	18	0.2	22	0.2	23	0.2	19	0.2	8	0.1													90	0.9	
Installation Kits N/R		2.8																						2.8	
Installation Equipment																									
ECP-240 (ARC-210) Equip		0.4							30	0.6	38	0.7	38	0.7	34	0.7								140	3.1
Installation Equipment N/R						2.0		0.9																2.8	
Engineering Change Orders																									
Data		0.2				0.1																		0.3	
Training Equipment		*								0.7														0.8	
Support Equipment						0.3																		0.3	
ILS																									
Other Support																									
Interim Contractor Support																									
Installation Cost	2	0.1			7	0.2	12	0.4	41	1.6	24	0.9	4	0.1										90	3.2
TOTAL PROCUREMENT		3.7		0.2		2.7		1.4		3.0		1.6		0.9		0.7								14.1	

- Notes:
1. Totals do not add due to rounding
 2. Asterick indicates amount less than 50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED:

AV-8B Night, AV-8B Night/Radar

MODIFICATION TITLE: AN/ARC-210 Electronic Protection (EP) Combination Radio (OSIP 23-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION:

Installation by Naval Aviation Depot (NADEP) Drive-in Mod (2 radios per aircraft). Installation requires engine removal which is budgeted in and requires concurrent installation with OSIP 21-92 (ATHS).

NOTE: B-kits and common logistics requirements are funded in the AN/ARC-210 Common Avionics OSIP 4-94.

ADMINISTRATIVE LEADTIME:

3 Months

PRODUCTION LEADTIME:

18 Months

CONTRACT DATES:

FY 1998 Dec-97

FY 1999 Jan-99

FY 2000 Jan-00

DELIVERY DATE:

FY 1998 Jun-99

FY 1999 Jul-00

FY 2000 Jul-01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 1998 & PY (27) kits	1	*			1	*	3	0.1	22	0.9		*											27	1.0
FY 1999 (11) kits											11	0.4											11	0.4
FY 2000 (2) kits											1	*	1	*									2	0.1
FY 2001 () kits																								
FY 2002 () kits																								
FY 2003 () kits																								
FY 2004 () kits																								
FY 2005 () kits																								
To Complete () kits																								
TOTAL	1	*			1	*	3	0.1	22	0.9	12	0.5	1	*								40	1.5	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	1		1						3		9	9	4	3	3	3	3	1							
Out	1		1						3		9	9	4	3	3	3	3	1							

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In									0	40
Out									0	40

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED:

AV-8B Night, AV-8B Night/Radar

MODIFICATION TITLE: AN/ARC-210 Electronic Protection (EP) Combination Radio (OSIP 23-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION:

Installation by Naval Aviation Depot (NADEP) field mod teams (2 radios per aircraft). Installation requires engine removal which is budgeted in and requires concurrent installation with OSIP 21-92 (ATHS).

NOTE: B-kits and common logistics requirements are funded in the AN/ARC-210 Common Avionics OSIP 4-94.

ADMINISTRATIVE LEADTIME:

3 Months

PRODUCTION LEADTIME:

18 Months

CONTRACT DATES:

FY 1998 Dec-97

FY 1999 Jan-99

FY 2000 Jan-00

DELIVERY DATE:

FY 1998 Jun-99

FY 1999 Jul-00

FY 2000 Jul-01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (36) kits	1	*			6	0.2	9	0.3	19	0.7	1	*												36	1.2
FY 1999 (8) kits											8	0.3												8	0.3
FY 2000 (6) kits											3	0.1	3	0.1										6	0.2
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	1	*	0	*	6	0.2	9	0.3	19	0.7	12	0.4	3	0.1	0	*	0	*						50	1.7

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	1		2	3	1			3	6		9	9	1	3	3	3	3	2	1							
Out	1		2	3	1			3	6		9	9	1	3	3	3	3	2	1							

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In									0	50
Out									0	50

Exhibit P-3a **INDIVIDUAL MODIFICATION**

MODIFICATION TITLE: Horizontal Stabilator Fatigue Improvements (OSIP 34-93)

MODELS OF SYSTEM AFFECTED: TAV-8B, AV-8B Day, AV-8B Night, AV-8B Night/Radar TYPE MODIFICATION: Structural

DESCRIPTION/JUSTIFICATION:

Between November 1992 and February 1993 T/AV-8B operators reported 35 incidents of cracking in stabilator center section aluminum alloy ribs and spars. McDonnell Douglas Aerospace Corp. (MDA) has defined a new stabilator center section that changes the structural material to titanium alloy, provides selective material gage increases and changes stabilator pivot fittings from titanium alloy to steel. These changes were incorporated in FY 1991 production aircraft Cum 241 and subsequent. This OSIP provides for the design, test and procurement of an ECP-243R1 airframe change kit for retrofit of the new stabilator center section in all 223 in-service T/AV-8B aircraft and installation into all spare stabilators.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Development is not required. Basic engineering and design are complete. Contractor laboratory testing and Contractor/Navy flight testing of the modified stabilator was completed in September 1994. Validation and verification of a production representative aircraft change kit and technical directive by the NADEP was completed in May 1993.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
ECP-243R1 (Horiz Stab) Kit	207	10.9					16	0.6															223	11.5	
Installation Kits N/R																									
Installation Equipment																									
ECP-243R1 (Horiz Stab) Equip																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data		*																							*
Training Equipment																									
Support Equipment																									
ILS																									
Other Support		0.2																							0.2
Interim Contractor Support																									
Installation Cost	156	3.9	47	1.3	24	0.9	11	0.3	14	0.5													252	7.0	
TOTAL PROCUREMENT		15.0		1.3		0.9		0.9		0.5															18.6

Notes:

- Totals do not add due to rounding
- Asterick indicates amount less than 50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: TAV-8B, AV-8B Day, AV-8B Night, AV-8B Night/Radar MODIFICATION TITLE: HORIZONTAL STABILATOR FATIGUE IMPROVEMENTS (OSIP 34-93)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: The first kit was provided at no cost to the government. The installation is being accomplished by a Navy Drive-in Modification line.

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 8 Months

CONTRACT DATES: FY 1998 _____ FY 1999 Jan-99 FY 2000 _____

DELIVERY DATE: FY 1998 _____ FY 1999 Sep-99 FY 2000 _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (207) kits	156	3.9	47	1.3	24	0.9	9	0.3																236	6.4
FY 1999 (16) kits							2	0.1	14	0.5														16	0.6
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	156	3.9	47	1.3	24	0.9	11	0.3	14	0.5														252	7.0

**NOTE: Installation includes 29 spare stabilators.

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	203	6	6	6	6	3	3	3	2	6	6	2													
Out	203	6	6	6	6	3	3	3	2	6	6	2													

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										252
Out										252

Exhibit P-3a

INDIVIDUAL MODIFICATION

MODIFICATION TITLE: Aircraft Life Extension Program (ALEP) (OSIP 16-94)

MODELS OF SYSTEM AFFECTED: TAV-8B, AV-8B Day, AV-8B Night, AV-8B Night/Radar

TYPE MODIFICATION: Obsolesence

DESCRIPTION/JUSTIFICATION:

ALEP was required to develop S,R&M modifications resolving known problems with critical life pacing items such as landing gear, their supporting airframe structure and other life limiting components (stabilator, vertical tail). The specification for the Harrier II calls out that the aircraft will have 6,000 service hours fatigue life but usage has given an approximate life of 11,000 service hours for the wing structure. During the landing gear service life assessment program, the service life of the landing gear components increased 2 to 3 fold and back-up structure service life increased to at least the Remanufacture specification life of 9,500 service hours. Other life limited structures (such as the stabilator, vertical tail and flaps) have become critical to track the service life. Additional teardown of high time fuselage and test article structures and analysis will increase the life of the airframe. The initial ALEP OSIP supported these life extension initiatives through actual fleet data analysis and component fatigue testing. This work has been transferred to an R&D initiative beginning in FY-99. However, completion of the development, procurement and installation ("O" Level) of Video Fatigue Data Recorder (VFDR) ECP CHPT-29) was retained under this OSIP. This modification will improve current on-board video data collection and enhance operational effectiveness of the aircraft. This modification will be retrofitted into all AV-8B configurations.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Fatigue life analysis initiative shifted to RDT&E,N effective FY-99. VFDR Design was initiated in 1st quarter FY-98 and V&V was completed 1st quarter FY-99.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
ECP CHPT-29 Kit					199	*																	199	*	
Installation Kits N/R		6.8		1.4		1.1																			9.3
Installation Equipment																									
VFDR			209	1.1																			209	1.1	
Installation Equipment N/R		0.4		0.1																					0.5
Engineering Change Orders																									
Data						*																			*
Training Equipment				*																					*
Support Equipment																									
ILS		0.1				0.1																			0.2
Other Support						0.1																			0.1
Interim Contractor Support																									
Installation Cost																									
TOTAL PROCUREMENT		7.4		2.7		1.3																			11.3

Notes:

- Totals do not add due to rounding
- Asterick indicates amount less than 50K

Exhibit P-3a

Exhibit P-3a **INDIVIDUAL MODIFICATION**

MODIFICATION TITLE: KAPTON Wire Replacement (OSIP 3-96)

MODELS OF SYSTEM AFFECTED: TAV-8B TYPE MODIFICATION: Safety

DESCRIPTION/JUSTIFICATION:

The Kapton Wiring Replacement (ECP-277) S,R&M modification is required to replace the MIL-W-81381 (KAPTON) wiring with MIL-W-22759 (TEFZEL) wiring in TAV-8B aircraft delivered prior to September 1989. TAV-8B's with KAPTON (MIL- W-81381) insulated wire suffer from high failure rate due to frequent incidents of chafing resulting in wire fires. The KAPTON (MIL-W-81381) wired airplanes also require frequent and costly maintenance actions to continue flying. Replacement of this wiring is expected to improve aircraft readiness. This modification was introduced in production in FY 1989 TAV-8B aircraft cum 16 & subsequent which deleted the KAPTON (MIL-W-81341) insulated wiring and replaced it with irradiated TEFZEL wiring which is much more resistant to chafe and fire. This modification will be retrofitted in 11 of the 12 TAV-8B aircraft (cum 15 & below) currently in the inventory.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

This modification was designed and incorporated in all production baseline aircraft delivered after September 1989. AFP not applicable. An installation validation scheduled for April 2000.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
ECP 277 (Kapton Wire) Kit			2	2.6	3	4.2			3	4.4	3	4.5											11	15.7	
Installation Kits N/R		0.1		2.1																				2.2	
Installation Equipment																									
ECP 277 (Kapton Wire) Equip																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data		0.7																							0.7
Training Equipment																									
Support Equipment																									
ILS						*		*		*															*
Other Support						0.4		0.1		0.1															0.6
Interim Contractor Support																									
Installation Cost									3	2.6	1	0.6	4	2.4	3	1.8							11	7.5	
TOTAL PROCUREMENT		0.8		4.7		4.7		0.1		7.2		5.1		2.4		1.8								26.7	

Notes:

1. Totals do not add due to rounding
2. Asterick indicates amount less than 50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED:

TAV-8B

MODIFICATION TITLE: KAPTAN Wire Replacement (OSIP 3-96)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION:

AFC installation will be accomplished by Naval Aviation Depot Drive-in Mod.

ADMINISTRATIVE LEADTIME:

5 Months

PRODUCTION LEADTIME:

24 Months

CONTRACT DATES:

FY 1998 Apr-98

FY 1999 _____

FY 2000 Mar-00

DELIVERY DATE:

FY 1998 Apr-00

FY 1999 _____

FY 2000 Mar-02

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (5) kits									3	2.6	1	0.6	1	0.6										5	3.8
FY 1999 () kits																									
FY 2000 (3) kits													3	1.8										3	1.8
FY 2001 (3) kits															3	1.8								3	1.8
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL									3	2.6	1	0.6	4	2.4	3	1.8								11	7.5

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	0									1		1	1		1			1	1	1	1	1	1	1	
Out	0											1	1		1		1		1	1	1	1	1	1	1

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In									0	11
Out	1								0	11

Exhibit P-3a

INDIVIDUAL MODIFICATION

MODIFICATION TITLE: Mission Planning (OSIP 23-99)

MODELS OF SYSTEM AFFECTED: TAV-8B, AV-8B Day, AV-8B Night, AV-8B Night/Radar

TYPE MODIFICATION: Upgrade

DESCRIPTION/JUSTIFICATION:

Update of current AV-8B Mission Planning Systems and transition to the Tactical Aircraft Mission Planning System (TAMPS) is required as part of the DON directed migration to a common Navy and Marine Corps mission planning system. Updates of legacy systems will: eliminate old and proprietary software incompatible with TAMPS, introduce TAMPS mission planning software, and develop the Mission Planning Module (MPM) required for conversion to TAMPS. TAMPS is used to develop, analyze, store and download mission planning data into the AV-8B. Conversion to TAMPS will greatly improve mission and strike planning data using threat intelligence, target data, mapping information, imagery and weapons data. It will also provide a number of mission planning tools: stores planning, GPS waypoints, 2D and 3D perspective mission views, flight profile display, and route analysis. Along with electronics input of mission planning data, TAMPS will produce hardcopy flight plans and strip maps.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

AV-8B Mission Planning will involve a phased conversion to TAMPS starting with upgrade of the current Mission Planning System and the Mission Planning Module (MPM) software release along with the AV-8B OC1.2 Operational Flight Program (OFP) in July 2001. A transitional TAMPS based MPM upgrade will be released at that time. The full TAMPS transition will be complete with the release of the MPM accompanying the OC1.3 OFP release at the start of FY-03.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
ECP TBD (Msn Plan) Kit																									
Installation Kits N/R																									
Installation Equipment																									
ECP TBD (Msn Plan) Equip																									
Installation Equipment N/R								1.3	0.8		1.1	0.9		0.8											4.8
Engineering Change Orders																									
Data								0.2	0.2		0.3	0.2		0.4											1.2
Training Equipment											0.1	*		*											0.1
Support Equipment																									
ILS																									
Other Support								0.1	0.3		1.0	0.6		1.0											3.1
Interim Contractor Support												*		0.1											0.2
Installation Cost																									
TOTAL PROCUREMENT								1.5	1.2		2.6	1.7		2.3											9.4

Notes:

1. Totals do not add due to rounding
2. Asterick indicates amount less than 50K

Exhibit P-3a

Exhibit P-3a	INDIVIDUAL MODIFICATION																									
MODIFICATION TITLE: <u>TAV-8B Performance Upgrade (OSIP 25-99)</u>																										
MODELS OF SYSTEM AFFECTED: <u>TAV-8B</u>													TYPE MODIFICATION: <u>Upgrade</u>													
DESCRIPTION/JUSTIFICATION: Update all AV-8B Trainer aircraft to better align with operational aircraft by incorporating Night Vision Goggle (NVG) lighting and the -408A engine. ECP-276 (NVG lighting) incorporation will allow for training of fleet pilots in NVG tactical flight operations during initial AV-8B flight training under the supervision of an instructor pilot. Currently, all NVG training is performed in the operational squadrons in single piloted aircraft after completion of initial pilot training. Early increase in pilot NVG proficiency and safer training environment. Improves configuration standardization with current Night/Radar NVG compatible components. ECP-276 will be installed on 17 of 18 aircraft currently in the inventory. The -408A engine is not thrust limited to the extent of the current -406A/B engines. ECP-275 (-408 Engine) provisions incorporation will allow expansion of VSTOL training time and increase the vertical landing performance safety margin by 2,000 pounds of thrust. Additionally, initial pilot training will be at the same performance levels experienced in the operational squadrons. Configuration consistency between Trainer and fleet Night/Radar aircraft will also be enhanced. Trainer aircraft cum T-16 and above have -408 provisions incorporated and require engines only. Trainer aircraft cum T-1 through T-15 required aircraft provision kits and engines. ECP-275 will be installed on 11 of the 12 T-15 & below aircraft currently in the inventory. ECP-288 will field a modified Operational Flight Program to support the full -408A engine capabilities. The ECP-269R1 Frame 12 fatigue life extension modification will concurrently installed on 17 of the 18 aircraft currently in the inventory under this OSIP.																										
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Initial design of the NVG and -408A aircraft kits will begin in November 1998. Engine provisioning software development (ECP-288) will be initiated in November 1998.																										
FINANCIAL PLAN (TOA, \$ in Millions):																										
	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
RDT&E																										
PROCUREMENT																										
Installation Kits																										
ECP 275 (-408 Engine) Kit (T 1-15)							5	4.2		2	1.7		2	1.7		2	1.8							11	9.4	
ECP 276 (NVG) Kit (T 1-24)							5	2.3		5	2.3		4	1.9		3	1.4							17	7.8	
ECP 269 (Fr 12) Kit (T 1-24)							5	0.2		5	0.2		4	0.2		3	0.1							17	0.7	
ECP 075 (EMU) Kit (T 2,3)										1	*		1	*										2	*	
Installation Kits N/R								3.2																	3.2	
Installation Equipment																										
ECP 275 (Engines) Equip (T 1-15)							5	19.3		2	7.7		2	7.9		2	8.0							11	43.0	
ECP 275 (Engines) Equip (T 16 & up)							6	23.2																6	23.2	
ECP 275 (FFT) Equip (T 1-15)							5	0.1		2	*		2	*		2	*							11	0.2	
ECP 075 (DSU) Equip (T-1,2,3)							1	0.1		1	0.1		1	0.1										3	0.4	
ECP 275 (EPI) Equip (T 1-15 2 per A/C)							10	0.2		4	0.1		4	0.1		4	0.1							22	0.4	
ECP 276 (NVG) Equip (T 1-24)							5	0.7		5	0.7		4	0.6		3	0.4							17	2.4	
ECP 075 (EMU) Equip (T 1-24)							5	0.3		5	0.3		4	0.2		3	0.2							17	0.9	
Engineering Change Orders																										
Data								3.2						0.7											3.9	
Training Equipment								1.8																	1.8	
Support Equipment								0.7		*			*			*									0.782	
ILS								0.2																	0.2	
Other Support: ECP-288								5.8		1.8			2.2			0.2									10.0	
Interim Contractor Support																										
Installation Cost													5	0.4		18	1.2		16	1.3		8	0.5		47	3.3
TOTAL PROCUREMENT								65.4		14.9			15.3			14.1			1.3			0.5			111.4	

Notes:
 1. Totals do not add due to rounding
 2. Asterisk indicates amount less than 50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: **TAV-8B** MODIFICATION TITLE: TAV-8B Performance Upgrade (OSIP 25-99)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: **AFC installation will be accomplished by Naval Aviation Depot Drive-in Mod. ECP-275 will be installed concurrent with ECP-276 on aircraft cum T-15 & below.**

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 25 Months

CONTRACT DATES: FY 1998 _____ FY 1999 Nov-98 FY 2000 Nov-99

DELIVERY DATE: FY 1998 _____ FY 1999 Dec-00 FY 2000 Dec-01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 (15) kits										5	0.4	10	0.7											15	1.1
FY 2000 (13) kits												8	0.5	5	0.4									13	0.9
FY 2001 (11) kits														11	0.9									11	0.9
FY 2002 (8) kits																8	0.5							8	0.5
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL											5	0.4	18	1.2	16	1.3	8	0.5	0	*	0	*	47	3.3	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	0														3	2		3	6	3	6	3	5	3	5
Out	0																	5		6	3	6	3	5	3

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	3	5								47
Out	5	3	5	3						47

Exhibit P-3a **INDIVIDUAL MODIFICATION**

MODIFICATION TITLE: SJU-4 Escape System Performance Upgrade (OSIP 18-00)

MODELS OF SYSTEM AFFECTED: All T/AV-8B Aircraft (TAV-8B, AV-8B Day, AV-8B Night, AV-8B Radar). TYPE MODIFICATION: Safety

DESCRIPTION/JUSTIFICATION:

The AV-8B escape system was originally designed to provide safe escape for aircrew within the unique flight regime of the Harrier aircraft. At the time of development an increase in physiological loads on the aircrew at moderate and high speed ejections were traded-off for higher ejection performance at low altitude and adverse attitude. A number of aircrew have sustained severe neck injuries and a fatality have resulted from parachute opening shock and poor body position/alignment at moderate and high speed ejections. Warnings and restrictions have been placed on the escape system until design deficiencies have been corrected. This modification supports an escape system upgrade program to investigate, design, develop, and test the adaptation of current escape technologies to reduce the risk of injury to aircrew for the entire escape envelope. Trade studies have identified the most promising mature escape technologies, including a new restraint, parachute, and improved speed sensing.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

NAVAIR completed trade studies in October 98. Program initiation and receipt of R&D funding anticipated, January 99. Contract award planned for March 99. Component/subsystem testing, August 99. FY00 procurement of 5 units will be used for validation & verification purposes. DT-I will commence in June 00 and DT-II will complete in September 00.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E ELEMENT# 0604264N																									
PROCUREMENT																									
Installation Kits									5		139		66												
Installation Kits N/R																									
Installation Equipment									5	0.1	139	2.1	66	1.0											3.2
Installation Equipment N/R																									
Engineering Change Orders																									0.4
Data																									0.6
Training Equipment																									0.7
Support Equipment																									
ILS																									0.2
Other Support																									
Interim Contractor Support																									
Installation Cost																									
TOTAL PROCUREMENT										2.0		2.1		1.0											5.1

Notes:

- Totals do not add due to rounding
- Asterick indicates amount less than 50K

EXHIBIT P-40, BUDGET ITEM JUSTIFICATION DATE: **February 1999**

APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications								P-1 ITEM NOMENCLATURE F-14 Series Modifications					
Program Element for Code B Items:								Other Related Program Elements					
	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
QTY													
COST (In Millions)	596.3	A	226.5	275.4	214.4	83.4	6.3	25.7	20.2	19.1	0.1		1,467.3

This line item funds modifications to the F-14 aircraft. The F-14 is a twin-engine, two seat, variable sweep, supersonic strike fighter capable of engaging multiple targets simultaneously at altitudes from sea level to 80,000 feet. The overall goal of the modifications budgeted in FY 2000 is to maintain the F-14 as a viable warfighting platform with structural improvements to the airframe ensuring its continued integrity, the incorporation of a number of safety and modernization improvements, upgrades to the F-14B series aircraft to improve and extend its useful life, the incorporation of the GPS and Embedded GPS/INS (EGI) avionics package, the inclusion of a comprehensive precision strike fighter capability for fleet long range high payload strike missions. The specific modifications budgeted and programmed are:

(TOA, \$ in Millions)

<u>OSIP No.</u>	<u>Description</u>	<u>Prior Years</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To Complete</u>	<u>Total</u>
152-83	Structural Improvements	204.9	38.6	55.4	45.4	15.0	2.8	21.9	19.5	18.3			421.8
33-92	Structural /Survivability Block Upgrade	284.0	57.3	54.9	34.5	11.7							442.5
12-94	Digital Flight Control	6.6	31.9	32.3	19.6	8.5							98.8
31-94	GPS/Embedded GPS	13.4	15.3	17.9	9.2	3.1							58.9
42-95	Precision Strike Program	81.2	77.4	107.6	90.8	32.8	3.2	3.5	0.8	0.8	0.1		397.9
15-96	F-14D ASPJ	5.9	6.0										11.9
20-96	F-14 Critical Systems & Component Modernization			7.2	14.8	12.3	0.4	0.4					35.1
	OSIPs Less Than \$1M	0.3											0.3
	Total	596.3	226.5	275.4	214.4	83.4	6.3	25.7	20.2	19.1	0.1		1,467.3

Note: Totals may not add due to rounding.

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: Structural Improvements (OSIP 152-83)

MODELS OF SYSTEMS AFFECTED: F-14A/B/D

TYPE MODIFICATION: Structural Life Extension/Safety/Reliability

DESCRIPTION/JUSTIFICATION: A full scale test on F-14 "Aircraft 98" mounted test rig at Grumman, Bethpage was concluded in 1995. The goal of the fatigue test was 18,000 hours, approximately equivalent to 9,000 hours flight time. A total of 17,349 test hours were completed. The point at which structural ECP'S are initiated depends upon the type of failure discovered in testing and its location in the aircraft structure. When a critical load path involving safety is compromised, a determination is made as to how many flight hours can be flown before aircraft become structurally unsafe to fly. Various fatigue analysis models, plus Aircraft 98 Test Data, determine the point at which flying must stop and repairs be performed in order to reach or extend the aircraft fatigue life. All modifications are based on the results of such tests. The primary structural improvements in the OSIP are at 5,000, 7,000, and 9,000 hour Time Compliance Requirements. Follow on test ing on F-14 "Aircraft 99" will start in 2001 to analyze Fatigue Life potential for further structural life based on comparison of current FLE calculations vs additional test results. This OSIP also includes follow-on outer wing panel fatigue testing, wire fatigue testing, and several other airframe modifications: FS 353 Frame Replacement, Back-up Flight Control, TF-30 Breather Pressure, PHOENIX Fairing Latches, 2 Outer Wing Panel Leading Edge Repairs, Remanufacture F-14B(KB, KM) and F-14D(r) Door reconfiguration, as well as NRE for Flap/Slat and RAM AIR in FY 97 for which kits will be bought in OSIP 20-96.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Northrop-Grumman Aerospace Corporation completed fatigue tests to provide failure data. The ECP's procured under OSIP 152-83 are to support those aircraft that require various Time Compliance Requirements (TCR). 5,000 Hour TCR (5K TCR) incorporates ECP-1225 (AFC-776) and ECP-1227 (AFC-790, AFC-837). 7,000 Hour TCR (7K TCR) is ECP-1243 (AFC-802). 9,000 Hour TCR (9K TCR), ECP-1287 AFC-875, is being designed, tested and procured with AFC in development. The TCR's are also expressed in percent of Fatigue Life Expended (FLE). All F-14's required to sustain inventory requirements will receive 5K TCR's. F-14B's and F-14D's will receive 7K and 9K TCR's. These corrections will be performed concurrently, whenever possible, to minimize installation costs.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total				
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$			
RDT&E																											
PROCUREMENT																											
Installation Kits																											
5K Kits, ECP 1225/1227	284	28.2	17	3.8	29	6.7	3	0.7	2	0.5														335	39.9		
F-14D 7K Kits, ECP 1243	38	13.8	5	0.5	9	0.9	2	0.2	2	0.2	2	0.2												58	15.8		
9K Kits, ECP 1287			2	1.0	18	10.8	10	5.1																30	16.9		
TCR Fuel Cells	50	0.2																						50	0.2		
ECP-305 BUFCOM Part 1 Kits			200	0.1																				200	0.1		
ECP-276 BUFCOM Part 11 Kits**							145	0.1																145	0.1		
AFC-859 Bulk Material, ECP 1285			200	0.2																				200	0.2		
ECP 1285 PT II WING CRACK									200	0.2														200	0.2		
ECP-304 F.S. 353 Frame Kits			95	0.3	99	0.3																		194	0.6		
TF-30 Breather Pressure **	169	2.1					136	0.7																305	2.8		
Phoenix Fairing Kits, ECP Pending			50	*																				50	0.0		
Door Reconfiguration							10	0.1	33	0.3														43	0.4		
Rudder Servo, ECP 279	288	1.0																						288	1.0		
FEMS Engine Diagnostic	20	0.4																						20	0.4		
AFC-737, ECP 147 5K Partial	50	0.2																						50	0.2		
Other Prior Year Kits		47.5																							47.5		
Installation Kits N/R		24.0		14.5		3.2		5.7		0.7				15.4		16.0		18.3								97.8	
Installation Equipment																											
Auxillary Hardware				0.2		0.5		0.4		0.1				0.2		0.1									1.5		
Installation Equipment N/R																											
Engineering Change Orders																											
Data		0.6		0.5		0.3		0.3						0.2		0.1									2.1		
Training Equipment																											
Support Equipment																											
ILS																											
Other Support				2.1		1.8		7.8		0.9		0.1		1.9		2.6									17.2		
Interim Contractor Support																											
Installation Cost	271	86.9	289	15.3	256	30.8	204	24.3	196	12.1	50	2.4	94	4.1	1	0.7									1,361	176.8	
Total Procurement		204.9		38.6		55.4		45.4		15.0		2.8		21.9		19.5		18.3								421.7	

- Notes:
1. Totals may not add due to rounding
 2. Asterisk indicates amount less than \$50K
 3. Double Asterick indicates O/I Level Install - No P3a Install Schedule Attached

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F-14A/B/D

MODIFICATION TITLE: Structural Improvements (OSIP 152-83) ECP-1225/1227/1243/1287 (5K, 7K, 9K KITS)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: NADEP & commercial depot concurrent with SDLM: NADEP and contractor field mod. teams (FMT); drive-in mods. (DIM), organizational and intermediate level installs.

ADMINISTRATIVE LEADTIME: 7 Months PRODUCTION LEADTIME: 11-16 Months

CONTRACT DATES: FY 1998: 04/98 FY 1999: 04/99 FY 2000: 4/00

DELIVERY DATE: FY 1998: 03/99 FY 1999: 03/00 FY 2000: 3/01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (358) kits	271	86.9	24	12.8	30	26.0	26	19.9	7	4.5														358	150.1
FY 1999 (15) kits									8	6.1	6	1.9	1	0.6										15	8.6
FY 2000 (4) kits													4	2.1										4	2.1
FY 2001 (2) kits													1	0.4	1	0.6								2	1.0
FY 2002 () kits																									
FY 2003 () kits																									
FY 2003 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	271	86.9	24	12.8	30	26.0	26	19.9	15	10.6	6	1.9	6	3.1	1	0.6								379	161.8

* Prior year kit buys reflects 44 kits fewer than previous submit due to turning in surplus kits.

** Kit buys matches SDLM Master Induction schedule.

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	295	7	6	7	10	6	7	6	7	4	3	4	4	1	2	1	2	1	2	1	2	1				
Out	281	4	3	3	4	7	6	7	10	6	7	6	7	4	3	4	4	1	2	1	2	1	2	1	2	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										379
Out	1									379

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: **F-14A/B/D**

MODIFICATION TITLE: Structural Improvements OSIP (152-83)/ECP-1285 (MATL)/ECP-305 (BUFCOM)/ECP-276 (BUFCOM) PT II

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: **NADEP & commercial depot concurrent with SDLM; NADEP and contractor field mod. team (FMT); drive-in mods. (DIM), organizational and intermediate level installs.**

ADMINISTRATIVE LEADTIME: 1 - 4 Months

PRODUCTION LEADTIME: 1 - 6 Months

CONTRACT DATES: FY 1998: _____ FY 1999: 10/98 FY 2000: _____

DELIVERY DATE: FY 1998: _____ FY 1999: 11/98 FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (400) kits			240	1.9	136	2.2	24	1.0																400	5.1
FY 1999 (145) kits							65	0.3	80	0.4														145	0.7
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL			240	1.9	136	2.2	89	1.3	80	0.4														545	5.8

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	240	36	34	34	32	10	10	36	33	40	40														
Out	240	36	34	34	32	10	10	6	30	33	40	40													

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										545
Out										545

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F-14A/B/D

MODIFICATION TITLE: Structural Improvements (OSIP 152-83) ECP-304 (F.S. 353 FRAME KITS)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: NADEP & commercial depot concurrent with SDLM; NADEP and contractor field mod. teams (FMT); drive-in mods.

ADMINISTRATIVE LEADTIME: 4 Months

PRODUCTION LEADTIME: 8 Months

CONTRACT DATES: FY 1998: 02/98 FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: 10/98 FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (194) kits			25	0.6	90	2.6	79	3.0																194	6.2
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL			25	0.6	90	2.6	79	3.0																194	6.2

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	25	23	22	23	22	23	22	23	11																
Out		7	6	6	6	23	22	23	22	23	22	23	11												

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										194
Out										194

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F-14A/B/D

MODIFICATION TITLE: Structural Improvements (OSIP 152-83) Door Reconfiguration

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: NADEP & commercial depot concurrent with SDLM; NADEP and contractor field mod. team (FMT); drive-in mods. (DIM), organizational and intermediate level installs.

ADMINISTRATIVE LEADTIME: 1 Months

PRODUCTION LEADTIME: 4 Months

CONTRACT DATES: FY 1998: _____

FY 1999: 3/99

FY 2000: 10/99

DELIVERY DATE: FY 1998: _____

FY 1999: 7/99

FY 2000: 2/00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 (10) kits							10	0.1																10	0.1
FY 2000 (33) kits									33	0.3														33	0.3
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL								10	0.1	33	0.3												43	0.4	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In									10		16	17													
Out									10		16	17													

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										43
Out										43

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F-14A/B/D

MODIFICATION TITLE: Structural Improvements (OSIP 152-83) WING CRACK II (ECP-1285 PT II)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: NADEP & commercial depot concurrent with SDLM; NADEP and contractor field mod. team (FMT); drive-in mods. (DIM), organizational and intermediate level installs.

ADMINISTRATIVE LEADTIME: 4 Months

PRODUCTION LEADTIME: 4 Months

CONTRACT DATES: FY 1998: _____ FY 1999: _____ FY 2000: 3/00

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: 7/00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 () kits																									
FY 2000 (200) kits									68	0.8	44	0.5	88	1.0										200	2.3
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL									68	0.8	44	0.5	88	1.0										200	2.3

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In												68	11	11	11	11	22	22	22	22						
Out												24	44	11	11	11	11	22	22	22	22	22				

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										200
Out										200

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: F-14A/B Structural Maintenance and Survivability Block Upgrade (OSIP 33-92)

MODELS OF SYSTEMS AFFECTED: F-14A/B TYPE MODIFICATION: Life Extension/Structural Upgrade

DESCRIPTION/JUSTIFICATION: Cancellation of F-14D(R) program also canceled inclusive airframe line extension mods. A Block Upgrade Program is vital to maintaining an F-14 inventory capable of supporting planned CVW force structure through the year 2010. The program provides structural upgrade of 67 F-14B series aircraft, extends useful life, and procures and installs selected Time Compliance Requirements (TCR) kits. Initial production commenced in FY 1994 following the first phase of flight testing. The upgrade addresses Desert Storm lessons learned by incorporating threat countermeasure enhancements in the form of the ALR-67 Radar Warning Receiver and BOL Chaff modification as well as including conversion of basic weapon control components and displays to the MIL-STD-1553B bus digital architect. This architecture provides for direct distribution of threat warning to "smart" self defense dispensing systems (ALE-39), provides the flight crew with enhanced display of threat information and reduces the cost of future installation of advanced weapons and weapon control components. Included in the block upgrade is the selective replacement of highly flammable "KAPTAN" wiring with MIL-W-22759 series wiring. NRE for ECP's covering AWG-9, VDIG and throttle quadrant is also included in FY97. These three ECP's are now covered in OSIP 20-96 from FY 98 and out.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The upgrade program installs equipment which is either in production, has completed development or employs components derived from existing equipment. Many of the modifications are included in current OSIP's. The block upgrade provides for integrated installation of these current OSIP items plus additional equipment required to fulfill operational needs. Specifically, the structural modifications are derived from OSIP 152-83; the ALR-67 installations are derived from OSIP 2-91. The development of Programmable Tactical Information Display (PTID), the AWG-15H weapon control unit, and the Programmable Multiple Display Indicator Group (PMDIG) is complete and are being flown in test programs. The Bol/Chaff system has completed OPEVAL and is designated to be installed in all F-14 Upgrade Aircraft. The hybrid CP2213 computer uses a computing sub-system derived directly from the AYK-14 (XN-8), a computer whose development is complete. System integration and demonstration also includes flight tests at PMTC which began in August 1994. System integration and test, validation of software and release of programs are on schedule with Product Acceptance Test and Evaluation (PAT&E) successfully completed in June 1997. Time Compliance Requirements (TCR's) modification identified as ECP-1325, 1227, and 1243 will extend the service life of the aircraft to comply with current force level projections. The inclusion of the analysis and non-recurring for 9000 hour TCR is necessary to extend the service life of the upgrade aircraft to ensure those with greatest Fatigue Life Expended (FLE) are returned to the fleet with adequate flight time available. 9K TCR kit buys and all other NRE for all F-14 aircraft are contained in OSIP 152-83.

The development, system integration test, and prototype modifications are on schedule. All scheduled program milestones have been completed. This budget provides a program compatibility with a precision strike and increased survivability capability for the F-14.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total				
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$			
RDT&E																											
PROCUREMENT																											
Installation Kits																											
5K HR TCR/ECP-1225/1227	42	8.2																					42	8.2			
7K HR TCR/ECP-1243	47	3.1			15	1.4	3	0.4																65	4.8		
AFC-840 UPGRADE/ECP-245	47	8.8	10	1.8	10	1.1			2	0.2														69	12.0		
AFC-844 TARPS/ECP-269	14	1.1							2	0.3															16	1.4	
BOL CHAF/ECP-236	54	0.3	10	0.1	10	0.1																			74	0.5	
TCR, AUX Hardware		3.1		0.7		0.5		0.3																		4.5	
ALR-67 Provisions		0.4																								0.4	
NVIS/LANTIRN/BOL Aux Hardware									0.2																		
Wiring Kapton Replacement				1.9																						1.9	
Installation Kits N/R		13.7		1.6																						15.3	
Installation Equipment																											
Hybrid 5400B Computer	56	13.0	10	1.8	10	2.3	2	0.4																		78	17.6
PTID	15	6.5	10	5.8					2	1.0																27	13.3
PMDIG	56	8.7	10	1.8	10	1.7	2	0.3																		78	12.5
AWG-15	56	4.7	10	1.1	10	1.1	2	0.2																		78	7.1
MRSA			4	0.1																						4	0.1
MDL	15	0.5	4	0.2																						19	0.7
Installation Equipment N/R		142.7		2.2																							144.9
Engineering Change Orders																											
Engineering Change Orders		0.5		0.5		0.6																					1.6
Data		5.0																									5.0
Training Equipment		5.1		1.5		0.2		0.1																			6.8
Support Equipment		22.0		2.7		1.9		1.6		0.1																	28.4
ILS		15.4		3.4		3.9		1.8		0.1																	24.6
Other Support		7.5		17.0		23.9		20.9		4.4																	73.7
Interim Contractor Support																											
Installation Cost	120	13.7	44	13.3	60	16.4	30	8.4	12	5.3																266	57.1
Total Procurement		284.0		57.3		54.9		34.5		11.7																	442.6

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F-14A/B MODIFICATION TITLE: F-14A/B Structural Maintenance and Survivability Block Upgrade (OSIP 33-92) ECP-245

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Naval Aviation Depot or commercial installations concurrent with SDLM or drive-in-modification.

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 10 Months

CONTRACT DATES: FY 1998: 01/98 FY 1999: _____ FY 2000: 10/99

DELIVERY DATE: FY 1998: 01/99 FY 1999: _____ FY 2000: 8/00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (67) kits	25	6.7	12	5.6	17	6.6	10	3.3	3	1.0														67	23.2
FY 1999 () kits																									
FY 2000 (2) kits									2	0.8														2	0.8
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	25	6.7	12	5.6	17	6.6	10	3.3	5	1.8													69	24.0	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	37	6	3	3	5	3	3	2	2	3	2														
Out	25	4	2	3	3	3	3	3	3	3	3	4	4	4	2										

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										69
Out										69

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F-14A/B MODIFICATION TITLE: F-14A/B Struct. Maint. and Surv. Blk. Upgrade (OSIP 33-92) ECP-1225/1227/1243 (5K HR & 7K HR TCR'S)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Naval Aviation Depot or commercial installations concurrent with SDLM or drive-in-modifications.

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 10 Months

CONTRACT DATES: FY 1998: 12/97 FY 1999: 12/98 FY 2000: _____

DELIVERY DATE: FY 1998: 10/98 FY 1999: 10/99 FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 1998 & PY (104) kits	39	5.6	22	7.4	21	9.5	20	4.9	2	1.5													104	28.9
FY 1999 (3) kits									3	1.8													3	1.8
FY 2000 () kits																								
FY 2001 () kits																								
FY 2002 () kits																								
FY 2003 () kits																								
FY 2004 () kits																								
FY 2005 () kits																								
To Complete () kits																								
TOTAL	39	5.6	22	7.4	21	9.5	20	4.9	5	3.3												107	30.7	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	61	6	5	6	4	4	5	5	6	5															
Out	39	6	5	6	5	5	5	5	4	4	4	4	5	7	3										

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										107
Out										107

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F-14A/B MODIFICATION TITLE: F-14A/B Structural Maintenance and Survivability Block Upgrade (OSIP 33-92) ECP-236, BOL Chaff

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Naval Aviation Depot or commercial installations concurrent with SDLM or drive-in-modifications.

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 1 Months

CONTRACT DATES: FY 1998: 10/97 FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: 11/97 FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (74) kits	54	1.4	10	0.3	10	0.3																		74	2.0
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	54	1.4	10	0.3	10	0.3																		74	2.0

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	64	3	2	3	2																				
Out	54	3	2	3	2	3	2	2	3																

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										74
Out										74

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F-14A/B MODIFICATION TITLE: F-14A/B Structural Maintenance and Survivability Block Upgrade (OSIP 33-92) ECP-269,AFC-844 TARPS

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Naval Aviation Depot or commercial installations concurrent with SDLM or drive-in-modifications.

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 2 Months

CONTRACT DATES: FY 1998: _____ FY 1999: _____ FY 2000: 10/99

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: 12/99

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (14) kits	2				12																			14	
FY 1999 () kits																									
FY 2000 (2) kits									2	0.1														2	0.1
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	2				12				2	0.1														16	0.1

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	2	3	3	3	3					2															
Out	2					3	3	3	3				2												

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										16
Out										16

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Digital Flight Control System Improvement (DFCS) (OSIP 12-94)

MODELS OF SYSTEMS AFFECTED: F-14A/B/D TYPE MODIFICATION: Safety

DESCRIPTION/JUSTIFICATION: The F-14 has proven itself to be an extremely capable fighter since its IOC in 1973. Major aircraft improvements have already been developed which extend the service life of the F-14 to the year 2010. These improvements are primarily avionics and engine-performance upgrades which will greatly increase the F-14's capabilities. The F-14 Flight Control System (FCS) has never been upgraded. Its significant deficiencies will continue to limit the F-14's ability. Analysis has shown 35 F-14's Class A mishaps are due to out of control flight. At least 12 and possibly more could have been saved by the proposed DFCS improvements. The Foreign Comparison Test (FCT) demonstration program of \$36.18M completed on DFCS's ability to correct F-14 out of control flight and improve approach characteristics and boarding rate. The DFCS Improvement Program will correct flight control deficiencies contained in ORD # 278-05-92 dated 2 FEB 1991 and will consist of the following elements: Stability Augmentation System; Lateral Stick-to-Rudder Interconnect; Spin Resistance/Prevention; Wing Rock Suppression; Differential Stabilator Deflection Limiting; Low Speed Cross Controls; Landing Flying Qualities Improvement; and EMC/EMI hardening.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Current milestone projections for this program include non-recurring contract awarded 29 March 1996. Approval for procurement of initial production lot occurred 20 December 1996. The ECP was approved in April 1997. The first production contract was awarded in February 1997 with first delivery received in May 1998 and aircraft modifications began in May 1998.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
F-14A Kits			1	*	53	0.8	21	0.3																75	1.2
F-14 Reserve Kits																									
F-14B Kits			1	*	20	0.3	40	0.7	5	0.1													66	1.1	
F-14D Kits			1	*	9	0.1	28	0.5	12	0.2													50	0.8	
AICS Programmer																								0.2	
Installation Kits N/R		*																						0.2	
Installation Equipment			80	14.4	83	15.4	28	4.4															191	34.2	
Installation Equipment N/R		3.6		5.5				1.0	1.0															11.0	
Data				1.2		1.2		0.3																2.7	
Training Equipment				1.7		1.7		0.7	0.1															4.2	
Support Equipment				0.9		1.4		0.1																2.4	
ILS				0.7		0.5		0.5	0.3															2.0	
Other Support		3.0		7.4		8.4		6.5	4.7															30.0	
Interim Contractor Support								0.6	0.5															1.0	
Installation Cost					56	2.4	98	4.3	37	1.7													191	8.4	
Total Procurement		6.6		31.9		32.3		19.6	8.5															99.3	

- Notes:
1. Totals may not add due to rounding
 2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F-14A/B/D

MODIFICATION TITLE: Digital Flight Control System Improvements (DFCS) (OSIP 12-94)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: NADEP and Contractor Field Modification Team

ADMINISTRATIVE LEADTIME: 8 Months PRODUCTION LEADTIME: 6 Months

CONTRACT DATES: FY 1998: 12/98 FY 1999: 11/98 FY 2000: 11/99

DELIVERY DATE: FY 1998: 05/99 FY 1999: 4/99 FY 2000: 4/00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (85) kits					56	2.4	29	1.5																85	3.9
FY 1999 (89) kits							69	2.8	20	1.0														89	3.8
FY 2000 (17) kits									17	0.7														17	0.7
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL					56	2.4	98	4.3	37	1.7													191	8.4	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In				28	28	24	24	25	25	24	13														
Out				28	28	24	24	25	25	24	13														

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										191
Out										191

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: Global Positioning System/Embedded GPS (OSIP 31-94)

MODELS OF SYSTEMS AFFECTED: F-14A/B/D TYPE MODIFICATION: Reliability

DESCRIPTION/JUSTIFICATION: The Global Positioning System (GPS) is a spaced-based radio positioning and navigation system that will provide three dimensional position, velocity and time information to suitably equipped users on or near the Earth. GPS is designed to provide highly accurate passive position (16 meters), velocity (0.1 meter/sec) and time to users worldwide in all weather conditions. The GPS will interface with communication, navigation, and weapon systems equipment (i.e., standard attitude heading reference systems, inertial navigation systems, on-board computers, etc.) in selected application. For the F-14A/B aircraft, the GPS capability will be provided by the Embedded GPS/INS (EGI) avionics equipment. This combination allows for a "blended", highly accurate navigational solution between the GPS and the Inertial Navigation System (INS). For the F-14D, the GPS capability will be provided by the Miniaturized Airborne GPS Receiver (MAGR).

SPAWAR is the Primary Development Agency (PDA) for GPS and has funded Research and Development costs to design, prototype, install and test the integrated system on the first of each aircraft type. This effort includes development and documentation of the "A" kits. Procurement for the "A" kit, installation, ILS and "A" kit spares are NAVAIR, PMA responsibilities. The Group "A" kits are procured in this Operational and Safety Improvement Program (OSIP). The Group "A" kits consist of cabling, racks, airframe 4 structural components and other components required to install the equipment.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The NAVSTAR GPS program completed Phase II (full scale engineering development), completed Milestone IIIA (approval for limited production) in June 1986, and completed Milestone IIIB in January 1992. Congressional mandate has directed that GPS be installed in all platforms by the end of FY 2000. This has accelerated the original GPS procurement plan. Installation will be via drive-in mod and field mod teams.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
F-14B			20	1.3	27	1.8	19	1.3																66	4.3
F-14D	1	1.0	21	0.7	11	0.7	15	1.0																48	3.5
Installation Kits N/R		9.8		2.3																					12.1
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Engineering Change Orders				0.1		0.1																			0.1
Data		0.6		2.2		2.0																			4.9
Training Equipment	1	0.2	1	2.9	2	2.3																		4	5.3
Support Equipment		1.1		0.5		0.6																			2.2
ILS		0.4		0.8		0.3																			1.5
Other Support		0.2		4.6		7.2		0.8		0.6															13.4
Interim Contractor Support						1.2		0.3		0.3															1.8
Installation Cost	2	0.1			36	1.8	53	5.8	27	2.3														118	10.0
Total Procurement		13.4		15.3		17.9		9.2		3.1															58.9

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F-14B/D

MODIFICATION TITLE: Global Positioning System/Embedded GPS (OSIP 31-94)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: NADEP & contractor concurrent with standard depot level maintenance and drive-in modification for "A" kits. Kit "B" will be intermediate level installation.

ADMINISTRATIVE LEADTIME: 5 Months

PRODUCTION LEADTIME: 8 Months

CONTRACT DATES: FY 1998: 02/98 FY 1999: 12/98 FY 2000: _____

DELIVERY DATE: FY 1998: 11/98 FY 1999: 8/99 FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (84) kits	2	0.1			36	1.8	46	5.0																84	6.9
FY 1999 (34) kits							7	0.8	27	2.3														34	3.1
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	2	0.1			36	1.8	53	5.8	27	2.3													118	10.0	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	2	9	9	9	9	13	13	14	13	7	7	7	6												
Out	2	9	9	9	9	13	13	14	13	7	7	7	6												

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										118
Out										118

MODIFICATION TITLE: F-14 Precision Strike Program (OSIP 42-95)

MODELS OF SYSTEMS AFFECTED: F-14A/B/D TYPE MODIFICATION: Warfighting Upgrade

DESCRIPTION/JUSTIFICATION: The F-14 Precision Strike Operational Document (ORD 406-88-95) dated 14 June 1995 delineates an urgent Fleet requirement for a precision strike capability in FY 1996 to maintain a capacity for long range, high payload strike missions due to the A-6 retirement. The F-14 Precision Strike Program will enhance the strike-fighter capabilities of the existing F-14 aircraft to maintain a carrier-based extended range, high payload strike capability for the Fleet. The strike-fighter capability of the F-14 aircraft will be enhanced through the incorporation of a Forward Looking Infrared Receiver/Laser Designator (FLIR/LD). The FLIR/LD will provide the capability to autonomously target and deliver laser guided bombs (LGB's) and GPS Guided Weapons against strategic, high value targets (industrial complexes, power plants, bridges, etc.) and mobile battlefield targets (tanks, armored personnel carriers, SAM sites, etc.). The FLIR/LD system will be augmented by the Fast Tactical Imagery System to allow FLIR/LD information to be passed near real time to the battle group. To enhance the survivability of the F-14 defensive countermeasure systems (AN/ALR-67/Bol Chaff) and night vision compatible cockpit modification will be made to fleet aircraft. To enhance the F-14 aircraft capability to perform the Forward Air Control (Airborne) mission fleet aircraft will be modified to deliver rockets to designed targets. Non-development items (NDI) will be used to the maximum extent on this program.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The F-14 Precision Strike Program has been designated an ACAT III program and milestone decision authority has been designated to Program Executive Officer for Tactical Air Programs (PEO(T)). The program was approved at a Milestone IV/II Review in October 1995. Following the milestone decision, the integration of a NDI FLIR/LD (LANTIRN targeting pod) and Programmer Tactical Information Display (PTID) on the F-14 aircraft began with the award of the integration contract to Lockheed Martin Corporation in November 1995. To lower cost and shorten schedule, the FLIR/LD will be integrated as a stand alone sensor. The FLIR/LD will not be integrated with other aircraft sensors, and existing aircraft controls will not be modified to control FLIR/LD functions or modes. The FLIR/LD system will include a control panel and software to control FLIR/LD functions. F-14 FLIR/LD operational capability was established in June 1996.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total					
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$				
RDT&E																												
PROCUREMENT																												
Installation Kits																												
F-14B MCAP	10	0.2																						10	0.2			
F-14A Kits	19	0.8	41	1.9	10	0.5																		70	3.2			
F-14B UPGRADE Kits	4	0.2	35	1.6	12	0.6	12	0.6	4	0.2														67	3.1			
F-14D Kits	16	0.6	10	0.5	18	0.9	4	0.2																48	2.1			
AN/ALR-67 Kits			20	3.8	31	6.1																		51	10.0			
Night Vision Systems F-14A/B Kits			47	1.3	67	1.9																			114	3.2		
Night Vision Systems F-14D Kits			8	0.2	7	0.2	28	0.8																	43	1.3		
F-14 FTI KITS							117	0.3																	117	0.3		
Bol Chaff F-14A Kits	80	0.6																							80	0.6		
F-14B/D GBU-24E/B KITS							117	1.7																	117	1.7		
Installation Kits N/R		5.0		1.1		2.0		2.3		1.8		0.7		0.7												13.6		
Installation Equipment																												
Lantirn Targeting System	9	21.5	12	26.8	25	62.1	28	65.1																	74	175.4		
Night Vision Equipment					88	1.5	89	1.5																		177	3.0	
ALR-67 BSF					20	1.6	40	2.4																		60	4.0	
GBU 24E/B AAE							57	0.6	57	0.6																114	1.1	
PTIDS									28	14.0																28	14.0	
LANTIRN 40K									74	5.5																74	5.5	
Installation Equipment N/R	16	38.4	3	17.2		0.2		3.8		2.1																19	61.8	
Engineering Change Orders																												
Engineering Change Orders				1.5																							1.5	
Data		0.4		0.7		1.5		1.2		0.2																	3.9	
Training Equipment		0.1			2	2.1	1	1.2		1.1				0.3												3	4.7	
Support Equipment		6.4		5.7		11.5		1.1		1.0		0.1		0.4													26.2	
ILS		1.2		2.9		2.2		3.2		2.9		0.1		0.3													12.8	
Other Support		2.2		1.7		3.9		1.5		1.6		2.1		1.8		0.8		0.8		0.1							16.3	
Interim Contractor Support		0.9		2.9		1.6		1.2		0.8		0.2															7.5	
Installation Cost	48	2.7	189	7.6	187	7.4	195	2.4	98	1.0																717	21.1	
Total Procurement		81.2		77.4		107.6		90.8		32.8		3.2		3.5		0.8		0.8		0.1								397.9

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFE F-14A/B/D MODIFICATION TITLE: F-14 Precision Strike Program (OSIP 42-95) F-14B MLAP, F-14A Kits, F-14B Upgrade Kits, F-14D Kits

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Naval Aviation Depot Installations concurrent with SDLM or drive-in modifications.

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 3 Months

CONTRACT DATE: FY 1998: 11/97 FY 1999: 11/98 FY 2000: 11/99

DELIVERY DATE: FY 1998: 02/98 FY 1999: 02/99 FY 2000: 02/00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (175) kits	28	2.7	86	5.6	50	2.6	11	0.6																175	11.5
FY 1999 (16) kits							13	0.7	3	0.3														16	1.0
FY 2000 (4) kits									4	0.1														4	0.1
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	28	2.7	86	5.6	50	2.6	24	1.3	7	0.4													195	12.6	

Installation Schedule

	FY 1999 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	114	12	12	13	13	6	6	6	6	6	1														
Out	114	12	12	13	13	6	6	6	6	6	1														

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										195
Out										195

Exhibit P-3a

MODELS OF SYSTEMS AFFE F-14A/B/D MODIFICATION TITLE: F-14 Precision Strike Program (OSIP 42-95) ALR-67

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Naval Aviation Depot Installations concurrent with SDLM or drive-in modifications.

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 5 Months

CONTRACT DATE: FY 1998: 11/97 FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: 04/98 FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (51) kits			7	0.6	44	3.8																		51	4.4
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL			7	0.6	44	3.8																		51	4.4

Installation Schedule

	FY 1998 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	7	13	16	15																					
Out	7	13	16	15																					

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										51
Out										51

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F-14A/B/D MODIFICATION TITLE: F-14 Precision Strike Program (OSIP 42-95) BOL Chaff

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Naval Aviation depot installations concurrent with SDLM or drive-in modifications.

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 6 Months

CONTRACT DATE: FY 1998: 09/96 FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: 03/97 FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (80) kits	20		41	1.2	19	0.5																		80	1.7
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	20		41	1.2	19	0.5																		80	1.7

Installation Schedule

	FY 1998 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	61	8	11																						
Out	61	8	11																						

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										80
Out										80

Exhibit P-3a

MODELS OF SYSTEMS AFFE F-14A/B/D MODIFICATION TITLE: F-14 Precision Strike Program (OSIP 42-95) Night Vision

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Naval Aviation Depot Installations concurrent with SDLM or drive-in modifications.

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 6 Months

CONTRACT DATE: FY 1998: 11/97 FY 1999: 11/98 FY 2000: _____

DELIVERY DATE: FY 1998: 05/98 FY 1999: 5/99 FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (129) kits			55	0.2	74	0.5																		129	0.7
FY 1999 (28) kits							28	0.1																28	0.1
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL			55	0.2	74	0.5	28	0.1																157	0.8

Installation Schedule

FY 1998 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	55		37	37			28																	
Out	55		37	37			28																	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										157
Out										157

Exhibit P-3a

MODELS OF SYSTEMS AFFE **F-14B/D** MODIFICATION TITLE: F-14 Precision Strike Program (OSIP 42-95) GBU-24

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Naval Aviation Depot Installations concurrent with SDLM or drive-in modifications.

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 2 Months

CONTRACT DATE: FY 1998: _____ FY 1999: 02/99 FY 2000: _____

DELIVERY DATE: FY 1998: _____ FY 1999: 04/99 FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 (117) kits							58	0.5	59	0.5														117	1.0
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL							58	0.5	59	0.5													117	1.0	

Installation Schedule

	FY 1999 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In							29	29	15	15	15	14													
Out							29	29	15	15	15	14													

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										117
Out										117

Exhibit P-3a

MODELS OF SYSTEMS AFFE F-14B/D MODIFICATION TITLE: F-14 Precision Strike Program (OSIP 42-95) FAST TACTICAL IMAGERY (FTI)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Naval Aviation Depot Installations concurrent with SDLM or drive-in modifications.

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 1 Months

CONTRACT DATE: FY 1998: _____ FY 1999: 02/99 FY 2000: _____

DELIVERY DATE: FY 1998: _____ FY 1999: 03/99 FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 (117) kits							85	0.5	32	0.1														117	0.6
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL							85	0.5	32	0.1														117	0.6

Installation Schedule

FY 1998 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In						10	37	38	16	16														
Out						10	37	38	16	16														

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										117
Out										117

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: F-14 Critical System & Component Modernization (OSIP 20-96)

MODELS OF SYSTEMS AFFECTED: F-14A/B/D

TYPE MODIFICATION: Safety/Reliability

DESCRIPTION/JUSTIFICATION: The F-14 TOMCAT will provide Strike Fighter capability for Naval Aviation until integration of the F/A-18EF. System and component age and obsolescence will continue to impact F-14 safety and mission effectiveness. A need exists to develop and implement cost effective modifications for problem systems and components. Modifications included in this OSIP will reduce potential safety risks and improve aircraft mission performance through modernization of critical systems and components. These modifications consist of the following Engineering Change Proposals (ECP's): AWG-9 ECP 315-318 redesigns the antenna servo electronic package, updates the detail data display, replaces obsolete parts in the RF oscillator and corrects pre amp problems in the radar receiver; Throttle Quadrant ECP 309 replaces obsolete wiring and switches (safety issue); Vertical Display Indicator Group ECP 308 improves internal thermal control and replaces high failure parts (safety issue); Flap/Slat ECP 310 replaces bearing and control tube components reducing wing binding (safety issue); ECPs 320/321 correct medium PRF problems with power supplies and get them up to current -170 configurations, Wing Sweep Motors, 15 Degree Elbow Hydraulic Lines, the Turtleback Optical Fire Detection, Nacelle Elements, APG-71, F-14D IRST Compressor, the Mission Computer Upgrade, F-14D JTIDS Notch Filter, and HUD, SCADC, F-14D Glareshield and F-14D Readiness Improvement Requirements. Additional ECP's may be added from time to time as the need arises

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: No major development is planned within this OSIP. Potential safety and performance issues were identified in concert with NAVAIR, Fleet users, and the F-14 Fleet Support Team (FST). The FST used follow-on engineering/logistical analysis to identify affordable modifications that correct problems in weak or failing components rather than completely redesigning the system/subsystem.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
AWG-9 Antenna**					65	0.2	105	0.2																170	0.4
AWG-9 BEAM Power Supply					170	0.4	30	0.1																200	0.5
AWG-9 COLL Pwr Supp					170	0.6	30	0.1																200	0.7
AWG-9 DDD**					65	*	105	0.9																170	0.9
AWG-9 Receiver**					65	1.1	105	1.8																170	2.8
Flap/Slat					104	*	96	*																200	*
FCBM (ECP-276)							145	0.1																145	0.1
Throttle Quadrant							200	0.8																200	0.8
VDIG					64	0.1																		64	0.1
15 Deg Elbow Hyd Line**							200	0.4																200	0.4
Waveguide Dryers**							48	0.2	152	0.5														200	0.7
APG-71 Power Conv.**									200	0.5														200	0.5
F-14D IRST Compressor**									12	1.0														12	1.0
Mission Computer Upgrade**									50	5.3														50	5.3
F-14D HUD**									10	*														10	*
SCADC**									50	*	50	*	50	*										150	0.1
F-14D Glareshield**							10	0.1	40	0.2														50	0.3
Installation Kits N/R						1.5	3.9		0.5																5.9
Installation Equipment								0.1																	0.1
Installation Equipment N/R								0.1																	0.1
Engineering Change Orders																									
Data						0.0	0.6		0.1																0.7
Training Equipment							0.8		0.5																1.3
Support Equipment							0.3		1.3	34	0.4	22	0.4											56	2.3
ILS							0.0																		0.0
Other Support						2.8	2.0		1.3																6.1
Interim Contractor Support																									
Installation Cost						130	0.6	639	2.4	240	1.1													1,009	8.8
Total Procurement						7.2	14.8		12.3		0.4		0.4												35.0

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. Double asterisk indicates kits are being installed at O & I Level - No P-3a installation schedule attached.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F-14A/B/D

MODIFICATION TITLE: F-14 Critical System & Component Modernization (OSIP 20-96) ECP-309 (THROTTLE QUADRANT)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Depot Level Maintenance and organization and intermediate level.

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 3 Months

CONTRACT DATES: FY 1998: _____ FY 1999: 12/98 FY 2000: _____

DELIVERY DATE: FY 1998: _____ FY 1999: 02/99 FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 (200) kits							200	0.4																200	0.4
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL							200	0.4																200	0.4

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In						31	79	90																	
Out						31	79	90																	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										200
Out										200

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F-14 A/B/D

MODIFICATION TITLE: F-14 Critical System & Component Modernization (OSIP 20-96) ECP-321 (AWG-9 BEAM Pwr Supp)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Depot Level Maintenance and Organizational and intermediate level.

ADMINISTRATIVE LEADTIME: 10 Months

PRODUCTION LEADTIME: 2 Months

CONTRACT DATES: FY 1998: 07/98

FY 1999: 12/98

FY 2000: _____

DELIVERY DATE: FY 1998: 09/98

FY 1999: 2/99

FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (170) kits					65	0.3	105	0.3																170	0.6
FY 1999 (30) kits							30	0.1																30	0.1
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL					65	0.3	135	0.4																200	0.7

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In					65	35	35	35	30																
Out					65	35	35	35	30																

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										200
Out										200

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F-14 A/B/D

MODIFICATION TITLE: F-14 Critical Sytem & Component Modernization (OSIP 20-96) ECP-320 (AWG-9 COLL Pwr Supp)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Depot Level Maintenance and organizational and intermediate level.

ADMINISTRATIVE LEADTIME: 10 Months

PRODUCTION LEADTIME: 2 Months

CONTRACT DATES: FY 1998: 07/98

FY 1999: 12/98

FY 2000: _____

DELIVERY DATE: FY 1998: 09/98

FY 1999: 2/99

FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (170) kits					65	0.3	105	0.3																170	0.6
FY 1999 (30) kits							30	0.1																30	0.1
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL					65	0.3	135	0.4																200	0.7

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
In					65	35	35	35	30																				
Out					65	35	35	35	30																				

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										200
Out										200

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F-14 A/B/D

MODIFICATION TITLE: F-14 Critical System & Component Modernization (OSIP 20-96) ECP-276 (FCBM Wiring)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Intermediate Level.

ADMINISTRATIVE LEADTIME: 1 Months

PRODUCTION LEADTIME: 5 Months

CONTRACT DATES: FY 1998: _____

FY 1999: 10/98

FY 2000: _____

DELIVERY DATE: FY 1998: 10/98

FY 1999: 3/99

FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 (145) kits							65	0.2	80	0.3														145	0.5
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL							65	0.2	80	0.3													145	0.5	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In									65	40	40														
Out									65	40	40														

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										145
Out										145

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F-14 A/B/D

MODIFICATION TITLE: F-14 Critical System & Component Modernization (OSIP 20-96) ECP-308 (VDIG)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Depot Level Maintenance

ADMINISTRATIVE LEADTIME: 4 Months

PRODUCTION LEADTIME: 11 Months

CONTRACT DATES: FY 1998: 09/98 FY 1999: _____

FY 2000: _____

DELIVERY DATE: FY 1998: 08/99 FY 1999: _____

FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (64) kits									64	0.2														64	0.1
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL									64	0.2														64	0.2

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In										32	32														
Out										32	32														

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										64
Out										64

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F-14 A/B/D

MODIFICATION TITLE: F-14 Critical System & Component Modernization (OSIP 20-96) ECP-310 (FLAP SLAT)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Depot Level Maintenance

ADMINISTRATIVE LEADTIME: 1 Months

PRODUCTION LEADTIME: 5 Months

CONTRACT DATES: FY 1998: 05/98

FY 1999: 12/98

FY 2000: _____

DELIVERY DATE: FY 1998: 10/98

FY 1999: 5/99

FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (104) kits							104	1.0																104	1.0
FY 1999 (96) kits									96	0.7														96	0.7
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL							104	1.0	96	0.7													200	1.7	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In						36	36	32	32	32	32														
Out						36	36	32	32	32	32														

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										200
Out										200

CLASSIFICATION: **UNCLASSIFIED**

BUDGET ITEM JUSTIFICATION SHEET P-40										DATE: February 1999			
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications								P-1 ITEM NOMENCLATURE Adversary Series Modifications					
Program Element for Code B Items:								Other Related Program Elements					
	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
QUANTITY													
COST (In Millions)	3.1		0.0	0.1	*		0.1						3.3
<p>This line item funds modifications to F-5/F-16 Adversary aircraft. It allows the U.S. Navy to maintain as close a standardized configuration with the Air Force as possible based on need. It also allows the Navy to initiate unique structural or avionics modifications. The overall goal of the modifications budgeted in FY 2000 is to incorporate into the airframe and engines, selected Air Force approved Time-Compliance Technical Orders (TCTO's) to improve safety and reliability. The specific modifications budgeted and programmed are:</p>													
(TOA, \$ in Millions)													
OSIP No.	Description	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
29-81	Structural Fatigue/ Standardized Configuration with USAF	3.1	*	0.1	*		0.1						3.3
TOTAL		3.1	*	0.1	*		0.1						3.3
* indicates amount less than 0.051 Million													
Funding for Reserve Forces			*	0.1									

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: Follow-on Structural Fatigue/Standardized Configuration with USAF (OSIP 29-81)

MODELS OF SYSTEMS AFFECTED: F-5 Adversary Aircraft TYPE MODIFICATION: Safety/Reliability

DESCRIPTION/JUSTIFICATION: The Navy F-5 adversary aircraft inventory and all applicable funds are for 36 aircraft . USAF updated durability and damage and tolerance analysis, structural inspection, full scale fatigue testing and counting accelerometer data has identified structural fatigue in wings and fuselage areas. All US Navy aircraft will be grounded when fatigue life is expended on non-cold work wings until replaced with a cold work wing. Remaining aircraft require upper cockpit longeron repaired or replaced and dorsal longeron replacement. The avionics portion of this program includes such improvements as structural monitoring system. Installation of flight data recorder will ensure accurate recording of flight profile data and can result in up to 25% increase in fatigue life because of availability of data. The Navy will also have to install Improved Handling Quality changes in all aircraft received from the US Air Force. These changes are necessary because of the flight envelope these aircraft are operated in and also to maintain common configuration with existing Navy aircraft. In addition, selected Air Force approved Time Compliance Technical Orders (TCTOs) will be incorporated to improve safety.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: No development required.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Various Kits	291	1.2																					291	1.2	
Installation Kits N/R		1.5		*	0.1		*			0.1														1.7	
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data		0.1																						0.1	
Training Equipment																									
Support Equipment																									
ILS																									
Other Support																									
Interim Contractor Support																									
Installation Cost	291	0.4																					291	0.4	
Total Procurement		3.1		*	0.1		*			0.1														3.3	

- Notes:
1. Totals may not add due to rounding
 2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F-5 Adversary Aircraft

MODIFICATION TITLE: Follow-on Structural Fatigue/Standardized Configuration with USAF (OSIP 29-81)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION:

ADMINISTRATIVE LEADTIME: _____ Months

PRODUCTION LEADTIME: _____ Months

CONTRACT DATES: FY 1998: _____

FY 1999: _____

FY 2000: _____

DELIVERY DATE: FY 1998: _____

FY 1999: _____

FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (291) kits	291	0.4																						291	0.4
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	291	0.4																						291	0.4

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	291																								
Out	291																								

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										291
Out										291

CLASSIFICATION:

UNCLASSIFIED

BUDGET ITEM JUSTIFICATION SHEET P-40								DATE: February 1999					
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications								P-1 ITEM NOMENCLATURE ES-3 Series Modifications					
Program Element for Code B Items:								Other Related Program Elements					
	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
QUANTITY													
COST (In Millions)	448.7		6.7	5.0									460.4
<p>This line item funds modifications to ES-3A aircraft. The ES-3A is a four person carrier based replacement for the EA-3B. It provides passive electronic detection and identification of threats to the joint task commander and carrier battle group. The ES-3A is also the airborne component of the Battle Group Passive Horizon Extension System (BGPHERS). Active PAA inventory is 16. There are 16 aircraft in the ES-3A inventory. The ES-3A has an average service life of 29 years and will reach end of life service in 2002. The specific modifications budgeted and programmed are:</p>													
(TOA, \$ in Millions)													
OSIP No.	Description	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
79-88	S-3A to ES-3A Mod (BGPHERS)	427.0	0.9	1.3									429.2
32-95	Critical Avionics Upgrade	18.0	3.7	2.0									23.8
33-95	Critical Structures (SLAP/SLEP)	3.7	2.2	1.7									7.5
TOTAL		448.7	6.7	5.0									460.4
Totals may vary due to rounding													

CLASSIFICATION:

UNCLASSIFIED

MODIFICATION TITLE: S-3A to ES-3A Modification Program [Battle Group Passive Horizon Extension System (BGPHER) Airborne Component (AC)] (OSIP 79-88)

MODELS OF SYSTEM AFFECTED: ES-3A

TYPE MODIFICATION: Operational Improvement / Modernization

DESCRIPTION/JUSTIFICATION:

S-3A TO ES-3A MODIFICATION: Modifications of 16 (prototype plus 15 production) S-3A aircraft to an ES-3A configuration. Provision is also made to upgrade the prototype to production configuration at program completion. The ES-3A will be a dedicated replacement for the EA-3B using an augmented subset of the EP-3E Conversion-in Lieu of Procurement (CILOP) sensor package. Per Secretary of the Navy guidance, the ES-3A mission avionics suite will be common with the EP-3E CILOP to the maximum extend possible.

GLOBAL POSITIONING SYSTEM (GPS): The basic ES-3A configuration includes the Global Positioning System (GPS); A kits and installation costs are included in this OSIP. GPS B kits (GFE) are procured through Common Avionics OSIP 71-88. Incorporates ECP 420 which corrects communication and lighting deficiencies identified during fleet issue 1 OPEVAL.

The ES-3A has an operational requirement for reliable UHF communications. The current UHF radio (AN/ARC-156) suffers from serious reliability and obsolescence problems and lacks the internal intermodulation protection required for proper operation in today's operational environment. The AN/ARC-187 UHF radio to be installed is a derivative of the AN/ARC-164 which is recently used by the Air Force. This radio will correct the deficiencies.

BGPHER AC: In addition, the ES-3A design configuration allows for the BGPHER interoperable data link avionics suite, enabling it to be the airborne component to the BGPHER AN/ULQ-20. Further description is classified.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

A competitively awarded contract was exercised in February 1988 for design, fabrication, support, testing and delivery of a modified S-3A aircraft. Fixed price options have been exercised for kit procurement and installation for the remaining 15 aircraft. Formal systems testing through DT/OT is accomplished in two phases using Fleet Issue 1 software, then Fleet Issue 2 software. FY 1994 funding provided non-recurring engineering and kits required to integrate the current GPS derived navigation information onto the pilot's flight instruments in order to comply with September 1991 SECDEF direction requiring all military aircraft to be in compliance with the GPS Minimum Avionics Requirements (MAR). FY 1994 funds also procured a dedicated subset of mission avionics equipment for use with the interim basic operational system trainer and complete stand up of the Software Support Activity (SSA). FY1995 - FY1997 procured the remaining BGPHER hardware (AN/ARC-18 Common Data Links) and ARC-187 radios.

MODIFICATION TITLE: S-3A to ES-3A Modification Program [Battle Group Passive Horizon Extension System (BGPHEs) Airborne Component (AC)] (OSIP 79-88)

MODELS OF SYSTEM AFFECTED: ES-3A

TYPE MODIFICATION: Operational Improvement

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
CIP	16	.3																					16	.3	
KIT (Airframe)	30	80.5																					30	80.5	
KIT GPS MAR	15	.3																					15	.3	
CDL	16	.1																					16	.1	
Installation Kits N/R		76.4																						76.4	
Installation Equipment																									
CIP	16	1.7																					16	1.7	
GFE Items		146.7																						146.7	
GPS (MAR Compliance)	15	1.8																					15	1.8	
CDL	13	7.5																					13	7.5	
ARC-187	16	1.2																					16	1.2	
Installation Equipment N/R		2.9																						2.9	
Engineering Change Orders																									
Data		16.5																						16.5	
Training Equipment		.4																						.4	
Support Equipment		9.3																						9.3	
ILS		6.1																						6.1	
Other Support		59.3		.9		.6																		60.7	
Interim Contractor Support																									
Installation Cost	44	15.8			30	.7																	** 74	16.5	
TOTAL PROCUREMENT	137	427.0		.9		1.3																	137	429.2	

Notes:

1. Totals do not add due to rounding
2. Asterisk indicates amount less than 51K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: ES-3A

MODIFICATION TITLE: S-3A to ES-3A Modification Program [Battle Group Passive Horizon Extension System (BGPHEs) Airborne Component (AC)] (OSIP 79-88) ARC-187 (CIP)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor/Government Field Mod Team installation

ADMINISTRATIVE LEADTIME: N/A Months

PRODUCTION LEADTIME: N/A Months

CONTRACT DATES: FY 1998: N/A FY 1999: N/A FY 2000: N/A

DELIVERY DATE: FY 1998: N/A FY 1999: N/A FY 2000: N/A

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (15) kits					15	.7																		15	.7
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL					15	.7																		15	.7

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In		3	4	4	4																					
Out			3	4	4	4																				

	FY 2004				FY 2005				TO COMPLETE	TOTAL
	1	2	3	4	1	2	3	4		
In										15
Out										15

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: ES-3A

MODIFICATION TITLE: S-3A to ES-3A Modification Program [Battle Group Passive Horizon Extension System (BGPHEs) Airborne Component (AC)] (OSIP 79-88) CDL

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor installation

ADMINISTRATIVE LEADTIME: N/A Months

PRODUCTION LEADTIME: N/A Months

CONTRACT DATES: FY 1998: N/A FY 1999: N/A FY 2000: N/A

DELIVERY DATE: FY 1998: N/A FY 1999: N/A FY 2000: N/A

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 1998 & PY (15) kits					15	.1																	15	.1
FY 1999 () kits																								
FY 2000 () kits																								
FY 2001 () kits																								
FY 2002 () kits																								
FY 2003 () kits																								
FY 2004 () kits																								
FY 2005 () kits																								
To Complete () kits																								
TOTAL					15	.1																	15	.1

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In		3	4	4	4																				
Out			3	4	4	4																			

	FY 2004				FY 2005				TO COMPLETE	TOTAL
	1	2	3	4	1	2	3	4		
In										15
Out										15

MODIFICATION TITLE: ES-3A Critical Avionics (OSIP 32-95)

MODELS OF SYSTEM AFFECTED: ES-3A

TYPE MODIFICATION: Obsolescence

DESCRIPTION/JUSTIFICATION:

*CAINS II: (CAINS AN/ASN-92 Inertial Navigation System [CAINS I] Replacement/Electronic Flight Instrumentation (EFI): Designed in the late 1960's, the CAINS I has become increasingly non-supportable due to avionic parts obsolescence material condition of the chassis and internal wiring. The AN/ASN-92 provides one of two required heading platform stabilization sources necessary for embarked operations or night / instrument flight. Functional replacement will be the CAINS II system. There are no changes to aircraft performance. The EFI flight essential heading and attitude flight instruments and associated converters / drivers. Replacement avionic hardware consists of Non-Developmental Item (NDI) glass displays for the cockpit and 1553B digital Bus System Interface Unit (BSIU) which connects the display and the existing navigation system digital bus.

OE320: Correction of identified deficiency. Further description is classified.

*FLIGHT DATA COMPUTER (FDC): The present FDC is subject to failure modes which have been demonstrated to cause uncommanded roll inputs to the flight control system. Continued fleet use has required electrical disconnect of roll axis as an interim measure. An operable FDC is required for flight.

USH-26 REPLACEMENT: The current USH-26 software mission loader has unacceptable reliability of successful mission software loads and has extensive software load time for the carrier environment. The software is uploaded to a memory expansion unit which is a critical avionics obsolescence issue. This program would replace both the USH-26 and the memory expansion unit with the removable hard drive and VME Chassis.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Non-recurring engineering that is common for both ES-3A and S-3 platforms for the CAINS, Electronic Flight Instrumentation and Flight Data Computer is covered under the S-3 Critical Avionics OSIP. Non-recurring engineering funding covered under this OSIP is for ES-3A unique integration. Follow-on test and evaluation (FOT&E) will assess ES-3A unique changes. NRE for USH-26 has occurred in FY1996 and FY1997, respectively. Navy flight testing and procurement of install kits occurred in FY1997.

*NOTE: These equipment's were identified as critical obsolescence / support items with potential grounding effects much sooner than those caused by structural fatigue. ES-3A cost estimates are premised on implementation of OSIP 20-95 for S-3 aircraft to sustain economics of scale and logistic supportability.

MODIFICATION TITLES-3A Critical Avionics (OSIP 32-95)

MODELS OF SYSTEM AFFECTED ES-3A

TYPE MODIFICATION Obsolescence

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
USH-26 Replacement	16	.1																					16	.1	
Installation Kits N/R		.3			1.0																				1.3
Installation Equipment																									
FDC	16	1.4																					16	1.4	
OE-320			16	.7																			16	.7	
USH-26 Replacement	16	1.6																					16	1.6	
Installation Equipment N/R		7.8		1.2	0.6																				9.6
Engineering Change Orders																									
Data		.1		.1	*																				.3
Training Equipment		1.1																							1.1
Support Equipment				*																					
ILS		.2		.2																					.4
Other Support		5.4		1.5	.2																				7.1
Interim Contractor Support																									
Installation Cost	1	**			15	.1																	16	.2	
TOTAL PROCUREMENT	48	18.0	16	3.7	2.0																		64	23.8	

Notes:

1. Totals do not add due to rounding
2. Asterick indicates amount less than 51K ** One FY96 Prototype kit installed under Install Kit NRE.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: ES-3A

MODIFICATION TITLE: ES-3A Critical Avionics (OSIP 32-95) USH-26 Replacement

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Team

ADMINISTRATIVE LEADTIME: 10 Months

PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 1998: _____ FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (16) kits			1	**	15	.1																		16	0.2
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2003 () kits																									
FY 2003 () kits																									
To Complete () kits																									
TOTAL			1	**	15	.1																		16	0.2

** USH-26 prototype. Install costs included under FY96 install kits.

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	1	3	4	4	4																				
Out	1		3	4	4	4																			

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										16
Out										16

MODIFICATION TITLE: Critical Structures Program/Service Life Assessment Program (SLAP) (OSIP 33-95)

MODELS OF SYSTEM AFFECTED: ES-3A (Common program with S-3B)

TYPE MODIFICATION: SLEP

DESCRIPTION/JUSTIFICATION:

S-3 and ES-3A aircraft are included in the Naval Aviation Plan to support the carrier Battle Group through CY 2015. The S-3A aircraft was procured from 1972 to 1976 (1960's design / avionic technology) based on OR-927-AS dated 25 Mar 77. The S-3B Weapon System Improvement Program, which modified the S-3A to an S-3B, focused primarily on weapon system upgrades for mission enhancement and did not upgrade the critical airframe safety of flight avionics systems. The ES-3A aircraft similarly has not received an upgrade of its airframe safety of flight systems. This upgrade is a series of modifications required in order to ensure effective, safely flyable aircraft through the year 2015. Specifically, the Critical Structures modification includes replacement of the windshield temperature controller and the following airframe components: wing fold lug, horizontal stabilizer hinge fitting, flight controls elements, fuel flow/bleed air select vent valves, counterweights, and flap track ribs. SLAP (FY97) performed a fatigue and operational loads analysis to verify that the fatigue spectrum and aircraft utilization has not significantly changed since aircraft introduction. The Critical Structures Program is common between S-3B (OSIP 12-95) and ES-3A (OSIP 33-95).

RECURRING KIT STATUS: The Critical Structures Airframe kit (consisting of horizontal stabilizer hinge fitting - ECP AL-808, counterweights - ECP AL-802, flap track ribs - ECP AL-796, and flow/bleed air select vent valves - ECP AL-789), the Flight Control Elements Kits - ECP AL-807R1, and the Inner Wing Empennage Kit are for all 16 ES-3A aircraft.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Replacement of the airframe components / windshield temperature controller does not require any development. Non-recurring engineering for all five components was completed in FY1995. The first production buy began in FY1996 and installs commenced in FY1997.

MODIFICATION TITLE: Critical Structures Program (OSIP 33-95)

MODELS OF SYSTEM AFFECTED: ES-3A (Common program with S-3B)

TYPE MODIFICATION: SLEP

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
SDRS	16	.1																						16	.1
Critical Structures Airframe	4	.1	4	.1	4	.1																		12	.3
Inner Wing Empennage					4	*																		4	
Flight Controls Elements	2	.1	2	.1	2	.1																		6	.2
Installation Kits N/R		2.4		1.4																					3.8
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data		.2				.3																			.5
Training Equipment																									
Support Equipment																									
ILS		.2		.1		.1																			.3
Other Support		.5		.1		.6																			1.1
Interim Contractor Support																									
Installation Cost	16	.1	6	.4	6	.5																		28	1.1
TOTAL PROCUREMENT	22	3.7	6	2.2	10	1.7																		38	7.5

Notes:

1. Totals do not add due to rounding
2. Astrisk indicates amount less than 51K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: ES-3A MODIFICATION TITLE: Critical Structures Program (OSIP 33-95)
Flight Control Elements Kit

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor and NADEP Field Mod Team

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 9 Months

CONTRACT DATES: FY 1998: 1/98 FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: 10/98 FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (4) kits			2	.2	2	.2																		4	.4
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL			2	.2	2	.2																		4	.4

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	2	1		1																					
Out			1	1	1		1																		

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										4
Out										4

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: ES-3A MODIFICATION TITLE: Critical Structures Program (OSIP 33-95)
Critical Structures Airframe Kit

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor and NADEP Field Mod Team

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 9 Months

CONTRACT DATES: FY 1998: 1/98 FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: 10/98 FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (8) kits			4	.3	4	.3																		8	.5
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL			4	.3	4	.3																		8	.5

Installation Schedule

	FY 1997	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	& Prior	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	4	1	1	1	1																				
Out	2	2	1	1	1	1																			

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										8
Out										8

CLASSIFICATION:

UNCLASSIFIED

BUDGET ITEM JUSTIFICATION SHEET										DATE: February 1999																																																																																																																																																																																																																																																													
P-40										P-1 ITEM NOMENCLATURE																																																																																																																																																																																																																																																													
APPROPRIATION/BUDGET ACTIVITY										F-18 Series Modification																																																																																																																																																																																																																																																													
Aircraft Procurement, Navy/APN-5 Aircraft Modifications										Other Related Program Elements																																																																																																																																																																																																																																																													
Program Element for Code B Items:																																																																																																																																																																																																																																																																							
	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total																																																																																																																																																																																																																																																										
QUANTITY																																																																																																																																																																																																																																																																							
COST (In Millions)	273.2		145.5	143.9	194.9	308.8	285.6	240.9	237.6	231.2	224.5	1,063.6	3,349.7																																																																																																																																																																																																																																																										
<p>This line item funds modifications to F/A-18 aircraft. The F/A-18 Naval Strike Fighter is a twin-engine, mid-wing, multi-mission tactical aircraft. The F/A-18 is employed in both Navy and Marine Corps squadrons. Commencing with the FY 1988 procurement, both the single seat and two-seat F/A-18's include a night attack capability. F/A-18 can be missionized through selected use of external equipment to accomplish specific fighter or attack missions. This commonality provides the Operational Commander more flexibility in employing his tactical aircraft in a dynamic scenario. The primary design mission for the F/A-18 is a strike fighter which includes the traditional fighter applications, such as fighter escort and fleet air defense, combined with the attack applications, such as interdiction and close air support. Since the same fighter and self defense capability is retained, the overall goal of the modifications budgeted in FY 2000 is to implement commonality/capability. The specific modifications budgeted and programmed are:</p> <p>(TOA, \$ in Millions)</p> <table border="1"> <thead> <tr> <th>OSIP No.</th> <th>Description</th> <th>Prior Years</th> <th>FY 1997</th> <th>FY 1998</th> <th>FY 1999</th> <th>FY 2000</th> <th>FY 2001</th> <th>FY 2002</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> <th>To Complete</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>11-84</td> <td>Correction of Discrep.</td> <td>129.1</td> <td>22.3</td> <td>17.9</td> <td>27.4</td> <td>64.6</td> <td>58.5</td> <td>73.6</td> <td>87.9</td> <td>52.7</td> <td>47.9</td> <td>97.8</td> <td>680.8</td> </tr> <tr> <td>39-92</td> <td>AN/ARC-210</td> <td>8.8</td> <td>0.5</td> <td>0.3</td> <td></td> <td>0.7</td> <td>1.5</td> <td>2.2</td> <td>1.9</td> <td>1.2</td> <td>0.5</td> <td>0.2</td> <td>17.8</td> </tr> <tr> <td>19-94</td> <td>Common Configuration</td> <td>71.5</td> <td>30.7</td> <td>19.0</td> <td>22.5</td> <td>44.0</td> <td>45.0</td> <td>48.7</td> <td>53.6</td> <td>71.5</td> <td>83.5</td> <td>157.2</td> <td>647.1</td> </tr> <tr> <td>36-94</td> <td>GPS</td> <td>21.7</td> <td>7.3</td> <td>2.9</td> <td>9.8</td> <td>9.7</td> <td>8.2</td> <td>8.9</td> <td>3.0</td> <td></td> <td></td> <td>10.6</td> <td>82.1</td> </tr> <tr> <td>38-94</td> <td>AN/APG-73 RUG</td> <td>28.0</td> <td>7.8</td> <td>15.1</td> <td>18.6</td> <td>42.2</td> <td>18.9</td> <td>19.9</td> <td>4.3</td> <td>10.3</td> <td>8.9</td> <td>0.1</td> <td>174.1</td> </tr> <tr> <td>12-96</td> <td>PID</td> <td>14.2</td> <td>13.6</td> <td>6.6</td> <td>11.4</td> <td>3.8</td> <td>1.3</td> <td>0.3</td> <td></td> <td></td> <td></td> <td>146.5</td> <td>197.7</td> </tr> <tr> <td>3-97</td> <td>ATARS</td> <td></td> <td>62.1</td> <td>58.2</td> <td>41.2</td> <td>56.2</td> <td>24.3</td> <td></td> <td></td> <td></td> <td></td> <td>12.7</td> <td>254.7</td> </tr> <tr> <td>23-98</td> <td>Naval Reserve Upgrade</td> <td></td> <td></td> <td>24.0</td> <td>5.8</td> <td>7.0</td> <td>3.1</td> <td></td> <td></td> <td></td> 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<td>21-00</td> <td>USMC F/A-18A UPGRADE</td> <td></td> <td></td> <td></td> <td></td> <td>35.1</td> <td>35.3</td> <td>11.7</td> <td></td> <td></td> <td></td> <td></td> <td>82.1</td> </tr> <tr> <td>2-01</td> <td>AIM-9X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0.4</td> <td>2.2</td> <td>2.3</td> <td>3.4</td> <td>2.8</td> <td>2.5</td> <td>13.5</td> </tr> <tr> <td>TOTAL</td> <td></td> <td>273.2</td> <td>144.3</td> <td>143.9</td> <td>194.9</td> <td>308.8</td> <td>285.6</td> <td>240.9</td> <td>237.6</td> <td>231.2</td> <td>224.5</td> <td>1,063.6</td> <td>3,349.7</td> </tr> </tbody> </table> <p>* \$29.5 million in FY 1999 is available for reprogramming as a result of a delay in production award for the Multifunction Information Distribution System (MIDS).</p> <table border="1"> <thead> <tr> <th colspan="4">RESERVE INCLUDED IN TOTAL</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>26.5</td> <td>6.1</td> </tr> <tr> <td></td> <td></td> <td>7.1</td> <td>3.1</td> </tr> </tbody> </table>														OSIP No.	Description	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total	11-84	Correction of Discrep.	129.1	22.3	17.9	27.4	64.6	58.5	73.6	87.9	52.7	47.9	97.8	680.8	39-92	AN/ARC-210	8.8	0.5	0.3		0.7	1.5	2.2	1.9	1.2	0.5	0.2	17.8	19-94	Common Configuration	71.5	30.7	19.0	22.5	44.0	45.0	48.7	53.6	71.5	83.5	157.2	647.1	36-94	GPS	21.7	7.3	2.9	9.8	9.7	8.2	8.9	3.0			10.6	82.1	38-94	AN/APG-73 RUG	28.0	7.8	15.1	18.6	42.2	18.9	19.9	4.3	10.3	8.9	0.1	174.1	12-96	PID	14.2	13.6	6.6	11.4	3.8	1.3	0.3				146.5	197.7	3-97	ATARS		62.1	58.2	41.2	56.2	24.3					12.7	254.7	23-98	Naval Reserve Upgrade			24.0	5.8	7.0	3.1						39.8	10-99	DCS				5.3	1.3	1.3	5.5	5.1	5.8	5.7	8.5	38.5	11-99	SLEP				7.6	10.7	13.3	16.4	22.4	29.9	32.3	606.1	738.8	12-99	MIDS				38.3	27.4	70.9	49.9	55.7	55.0	41.4	6.3	344.9	20-99	NACES P3I				7.0	4.5	2.7					6.0	20.3	11-00	ALR-67(V)3					1.6	0.9	1.5	1.5	1.5	1.6	9.0	17.5	21-00	USMC F/A-18A UPGRADE					35.1	35.3	11.7					82.1	2-01	AIM-9X						0.4	2.2	2.3	3.4	2.8	2.5	13.5	TOTAL		273.2	144.3	143.9	194.9	308.8	285.6	240.9	237.6	231.2	224.5	1,063.6	3,349.7	RESERVE INCLUDED IN TOTAL						26.5	6.1			7.1	3.1
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10-99	DCS				5.3	1.3	1.3	5.5	5.1	5.8	5.7	8.5	38.5																																																																																																																																																																																																																																																										
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DD Form 2454, JUN 86

CLASSIFICATION:

UNCLASSIFIED

MODIFICATION TITLE **Correction of Discrepancies Identified during Preliminary Evaluation, Subsequent Flight Test Programs and Fleet Operations (OSIP 11-84)**

MODELS OF SYSTEM AFFECTED:

F/A-18A/B/C/DTYPE MODIFICATION: **SAFETY /RELIABILITY/IMPROVEMENT**

DESCRIPTION/JUSTIFICATION:

*Corrections to discrepancies found during testing and evaluation can sometimes be incorporated into production aircraft, effective with the physical configuration audit which establishes the product baseline of the aircraft. However, when this cannot be done due to time constraints, retrofit of the changes into already delivered aircraft requires funding through the Aircraft Modification Program. Additionally, deficiencies discovered during fleet operations must be corrected. The unacceptable alternative retrofitting would be multiple configurations in the fleet, which will create maintenance and supply problems, and in many cases the mission capability of the aircraft would be adversely affected as well as reduced service life. Corrections to the following items/conditions are required:

<p>External Stores EMI Protection (ECP 087S1) Auto AC Bus Isolation (ECP 121R1) Battery Control Relay Unit (ECP 165R1) FY86 Block Upgrade (ECP 178R1C1) Center Fuselage Structural Mods (ECP 241R1) Dorsal Longeron (ECP 251R1) 470.5 Bulkhead (ECP 262) Righthand AMAD Bay (ECP 267) Y508 Former (ECP 276) AC Bus Wiring MOD (ECP 284) AFT Engine Mount (ECP 305R1) Y657.35 Engine Bay Door Former (ECP 306) Main Landing Gear (MLG) Planning Link (ECP 311) MLG Trunnion Upgrade (ECP 319) Y488 Bulkhead (ECP 320) Deployable Flight Incident Recorder (ECP 321) AN/ASQ-173 Laser Detector/Tracker (ECP 342R1) Wing Fatigue Repair (ECP 353) MLG Shoulder Bolt (ECP 355) ASPJ System Improvement (ECP 364) Y470 Bulkhead Improvement (ECP 365) #1 Fuel Cell Floor (ECP 367) MLG Retract Actuator (ECP 375) Fretting on Formers & Spindles (ECP 391) Wing Attach Longeron Improvement (ECP 393) Fuselage Skin, Y518 to Y534 (ECP 498) Encoder/Decoder Silicone Gasket(ECP 414) Inlet Duct Skin at Y453 (ECP 417) Y470.5 Bulkhead MLG Trunnion (ECP 428) Speed Brake Trough (ECP 440) FLIR Power Supply Cutoff Circuit (ECP 450) Outboard Aileron Improvements (ECP 463R1) SUU-63 Wing Pylon Door Panel (ECP 488) Y470.5 Bulkhead Fatigue Change (ECP 492) Fuselage Skin at Y453 (ECP 498) Nacelle Skin Fatigue Improvements (ECP 501) LAU-115 Sparrow Mod (ECP 506) Improvement of Inner Wing SPAR (ECP 544) Fuel Barrier Web (ECP 548) Wing Drag Longeron (ECP 550) Y326.5 Plate Nut (ECP 561) Lower Center Keel Fire Hazard (ECP 562) TON Anomaly (ECP 571) Aileron/Trailing Edge Flap (ECP 574) Hydraulic Temp Gauges (ECP XXX) NAVFLIR Adapter (JAX-021) High Altitude Laser (JAX 032) Environment Control System Wiring (NI 742) Wing Fuel Dams (ECP NI 796) MLG Trunnion Assembly (NI 824) Heat Exchanger (ECP NI 827) Night Vision Display System (NVDS) (ECP NI 830) Trailing Edge Flap (NI 839) Aileron Hinge Mod (NI 844) Fuel Cell Floor Crack (ECP XXX) Side Fuselage Crack (ECP XXX) Bay 3 & 4 Shelf Improvement (ECP XXX)</p>	<p>Provide for the application of external stores EMI Protection. Modifies the 50A Battery Charging Converter installation to automatically isolate the busses and reset the generators following a dual power outa Safety modification to the utility/emergency battery control circuits and adds a battery relay control unit. Prevents inadvertent battery discharge. Increases the power handling capabilities of the four port antenna and the RF switchable filter in order to accommodate the RF power output requirements of the ASPJ System. Improves fatigue for the Dorsal Deck, Duct Skin rivets at Y442, ECS Inlet Casting, and Y419 Nacelle Former at Ramp Truss Attachment. Life extension modification to the Dorsal Longeron. Improves the fatigue life of the Y470.5 Bulkhead Outer Cap. Reliability and maintainability improvement to the interference between the motive flow tube and the hot fuel recirculation tube. Structural improvement of the Y508 Former by increasing the flange thickness and reinforcing the former with integral ri Reliability and maintainability improvement to the common cable routing of the primary/backup AC power distribution wires. Safety modification improves the aft engine mount support to prevent cracking in the aft engine mount support fitting Modifies the existing door former to prevent cracking. Safety modification to the existing planning link assembly. Belleville washers spring is replaced with nested external compression springs to provide additional overcenter locking force and stroke capability. Safety modification reconfigures and strengthens the MLG trunnion assembly to prevent catastrophic failure upon landing or takeoff. Modifies the Y488 bulkhead to reduce structural stress and improve fatigue life. Adds a Deployable Flight Incident Recorder Set (DFIRS) to provide nonvolatile storage of the last 30 minutes of flight incident data in a deployable unit. Incorporates 5 new access doors on existing mounting adapters to prevent in-flight opening and possible departure from the aircraft. Modifies the fastener holes in the Wing Panel Forward Spar and the #4 Intermediate Wing Spar to increase fatigue life. Safety modification provides new shoulder bolts to correct a deficiency concerning elongation of the AFT bolt hole in the MLG Door Actuator Support Fitting. Improves reliability and maintainability by improving the cooling system and correcting transmit switchable filter qual test problems. Modifies the Y470 bulkhead to reduce structural stress and improve fatigue life. Safety modification to improve the fuel cell floor strength to prevent cracking during catapult. Redesigns the MLG Retract Actuator Support Fitting and the Flange of Y470.5 Bulkhead where the fitting attaches and revises hydraulic timing to lengthen the Fatigue Life of the structures. Safety modification to correct fretting observed on outboard formers of horizontal stabilizer. Improves the fatigue of the longeron. Modifies exterior fittings and adds and internal bathtub to strengthen the area, reduce structural stress, and improve fatigue life. Safety modification to the existing access cover to eliminate fuel leaks from the integral wing tanks into the fuselage encoder/decoder. Addresses the retrofit design which will provide 12,000 SFH of life without cracks for the Inlet Duct Skin. Corrects the deficiency in the MLG Trunnion support at Y470.5 bulkhead. Modifies the existing speed brake trough area to strengthen it and improve fatigue life. Reliability and maintainability improvement to the existing FLIR power supply to prevent secondary damage to FLIR circuitry resulting from a FLIR power supply failure. Reliability and maintainability improvement to the existing aileron hinge and hinge fairing to increase fatigue life. Safety modification to the existing door panel to preclude loss of the door during flight Modifies the thickness of the existing bulkhead web to increase strength and improve fatigue life. Safety modification to strengthen existing fasteners attaching the P/N 74A324350 former to Y453 bulkhead. Retrofits the Inlet Nacelle Skin to correct acoustic vibration related fatigue failures. Modifies the lower rail of the LAU-115 to strengthen the area of the AIM-7 Sparrow missile forward hanger interface and improve fatigue life. Strengthens the existing inner wing spar to improve fatigue life. Safety improvement to the existing fuel barrier web to prevent fuel leaks. Structural improvement to the Wing Drag Longeron due to tabs attached to the closeout webs were cracking during installation. Modifies the existing fasteners at the Y326.5 Bulkhead to improve fatigue life. Safety improvement to the secondary pressure regulator bay to eliminate fire hazards. Corrects the deficiency of the three second Tone Anomaly in the CC Provides a full-life improvement for aircraft degradation caused by cracked trailing edge flap and aileron hinges. Improves the reliability of the hydraulic temperature gauges. Capability enhancement modification to allow use of the NAVFLIR at higher acoustic noise level environments. Modifies the Laser Transceiver Flashlamp and High Voltage Cable Connector Housing to eliminate potential arcing and ensure safe laser transceiver operation at the increased altitude of 34,000 feet. Modifies wiring to the number 3 Relay Panel Assy to connect the Left Main Gear (LMG) Weight on Wheels (WOW) Relay ABD the Dump/RAM Dump Reli Safety improvement modifies the inner wing inboard closure rib to prevent fuel leaks. Safety improvement to the MLG trunnion assembly to improve fatigue life and prevent failed landing gear mishaps. Provides for the removal of the nickel core and replaces with a more reliable stainless steel and nickel core. Adds capability to the lighting system to make the NVDS compatible. Safety modification to the trailing edge flap to correct flap departures while in flight. Safety modification to the current aileron hinge to prevent aileron departures, which cause severe damage to the aircraft and pose a threat to safety of flight. Safety modification to correct cracks at Y431, Y442, and Y453 in the fuel cavity floor deck centerline under tank two and three. Safety improvement to the fatigue life of the forward skin section of the chem-milled panels. Supports retrofit of Interrogator Transponder (CIT) Identification Friend or Foe (IFF) system into the F/A-18 Weapon System.</p>
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DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Each change has been or will be tested prior to installation in the F/A-18.

Exhibit P-3a

INDIVIDUAL MODIFICATION

MODIFICATION TITLE: AN/ARC-210 ELECTRONIC PROTECTION (EP) COMBINATION RADIO (OSIP 39-92)

MODELS OF SYSTEM AFFECTED: F/A-18 C&D Aircraft TYPE MODIFICATION: CAPABILITY IMPROVEMENT

DESCRIPTION/JUSTIFICATION:

The AN/ARC-210 (ORD# 486-88-93) is a combination UHF/VHF, AM/FM jam-resistant radio that was developed to allow for EP interoperability with the Air Force, Army and NATO. The radio provides dual UHF capability for carrier based TACAIR; VHF FM for close air support and maritime channels; VHF AM for air traffic control; and EP capabilities using the Air Force developed waveforms (UHF-AM HAVEQUICK I and II), and the Army developed waveform (VHF-FM SINCGARS). The AN/ARC-210 can be controlled by either a remote control unit or via a MIL-STD-1553 multiplex data bus. The EP parameters and single channel preset information can be loaded via a CYZ-10 Data Transfer Device (DTD). The fill information can consist of word-of-day for HAVEQUICK; the KGV-10 transec variable, hopssets and frequency lock-out tables for SINCGARS. F/A-18 ARC-210 requirements will be satisfied by retrofitting Lot X through Lot XVI and forward fitting Lot XVII through Lot XXI.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

F/A-18 was the lead aircraft for the AN/ARC-210 development program; therefore, retrofit procurement began in FY92. AN/ARC-210 Milestone III was approved in April 1994. First article test completed in January 1994. The additional requirements shown in this budget for FY2000 - 2005 reflect the fleet's desire for a common communications capability for Lots X and above F/A-18C/D. ARC-210 radios removed from other aircraft during DCS upgrade will be installed in F/A-18C/D Lots X and XI.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
RDT&E																										
PROCUREMENT																										
Installation Kits																										
Lot XII through XXI Kit	79	1.3																						79	1.3	
Lot X through XI Kit									23	0.7	47	1.5	47	1.6	20	0.7							4	0.1	141	4.7
Installation Kits N/R		0.8																								0.8
Installation Equipment **																										
Lot XII through XXI Kit	114	5.6																							114	5.6
Lot X through XI Kit																										
Installation Equipment N/R																										
Engineering Change Orders																										
Data		0.3																								0.3
Training Equipment																										
Support Equipment																										
ILS																										
Other Support																										
Interim Contractor Support																										
Installation Cost	35	0.9	27	0.5	17	0.3							23	0.6	47	1.2	47	1.2	20	0.5			4	0.1	220	5.2
TOTAL PROCUREMENT		8.8		0.5		0.3				0.7		1.5		2.2		1.9		1.2		0.5			0.2		17.8	

Notes:

- Total s do not add due to rounding
- Asterisks indicate amounts less than \$51K
- ** Quantities refer to number of radios (2/aircraft). The equipment and common logistics requirements for this OSIP have been funded in the AN/ARC-210 Common OSIP (4-94) starting in FY94.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F/A-18 C&D Aircraft MODIFICATION TITLE: AN/ARC-210 ELECTRONIC PROTECTION (EP) COMBINATION RADIO (OSIP 39-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: PUBLIC/PRIVATE COMPETITION AND AT NAVAL AVIATION DEPOTS.

ADMINISTRATIVE LEADTIME: 8 Months PRODUCTION LEADTIME: 16 Months

CONTRACT DATES: FY 1998 _____ FY 1999: _____ FY 2000: Jun-00

DELIVERY DATE: FY 1998 _____ FY 1999: _____ FY 2000: Oct-01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1996 & PY (79) kits	35	0.9	27	0.5	17	0.3																		79	1.8	
FY 1997 () kits																										
FY 1998 () kits																										
FY 1999 (0) kits																										
FY 2000 (23) kits													23	0.6											23	0.6
FY 2001 (47) kits															47	1.2									47	1.2
FY 2002 (47) kits																	47	1.2							47	1.2
FY 2003 (20) kits																			20	0.5					20	0.5
FY 2004 (0) kits																										
FY 2005 (0) kits																										
To Complete (4) kits																						4	0.1	4	0.1	
TOTAL	35	0.9	27	0.5	17	0.3							23	0.6	47	1.2	47	1.2	20	0.5			4	0.1	220	5.2

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	62	5	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	5	11	12	12	12
Out	62	5	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	5	11	12	12	12

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	11	12	12	12	11	9	0	0	4	220
Out	11	12	12	12	11	9	0	0	4	220

Exhibit P-3a**INDIVIDUAL MODIFICATION**MODIFICATION TITLE: Common Configuration (OSIP 19-94)MODELS OF SYSTEM AFFECTED: F/A-18 A/B/C/DTYPE MODIFICATION: CAPABILITY IMPROVEMENTS / SAFETY

DESCRIPTION/JUSTIFICATION:

The F/A-18 Cockpit Video Recording System (CVRS) requires an upgrade to improve operational debriefing, increase resolution and recording time, and improve fleet training. During Operation Desert Storm, deficiencies of the current F/A-18 CVRS became obvious. The current CVRS consists of one monochrome camera, a video tape recording (VTR) panel switch, and a 3/4 inch tape recorder. The replacement CVRS consists of three color cameras, a VTR panel switch and two HI-8MM recorders. Also included in the new system is an enhanced ground playback station that will allow the simultaneous playback of four images from two separate aircraft. Replacement of the current CVRS in the F/A-18 will provide the following capabilities: improved operational debriefing (BDA), enhanced fleet training, the ability to record the display from the right Digital Display Indicator (DDI) and either the Heads-Up Display (HUD) of the left DDI simultaneously in color, greater commonality with existing commercial and private playback equipment, increased recording time, enhanced resolution and an overall reduction in system size and weight. The AN/AYK-14(V) Very High Speed Integrated Circuit (VHSIC) Processor Module has three important features: a new computer chassis, VHSIC processor cards and 1M/W memory on the processor cards that allows necessary growth through the 1990's and beyond. With the F/A-18 C/D out of production one year earlier than originally projected, it has created requirements in the Modification Budget Activity. These additional requirements are ancillary equipment (Targeting Forward Looking Infrared (FLIR) and Digital Storage Units (DSUs)), logistics support and Operational Flight Program (OFP) software. The Advanced Targeting FLIR (ORD# 437-88-96) will provide the F/A-18C/D with a significantly enhanced capability to detect, track, and attack air and ground targets. New laser guided and GPS standoff weapon systems, and higher altitude attack profiles, require improved performance over the current AAS-38/46 Targeting FLIR. The ATFLIR is designed to provide a quantum leap in operational effectiveness to fully support the standoff precision strike mission. Improved reliability and maintainability technology will increase operational availability while reducing life cycle costs.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

CVRS utilizes moderately militarized HI-8MM video recorders that are currently available (no development required) with CVRS installed. The AN/AYK-14 is fully developed. It was production incorporated into Lot XV and subsequent F/A-18C/Ds and has had retrofit funding since 1994. ATFLIR development began in FY1997. The E&MD contract was awarded in March, 1998. Preliminary Design Review and Critical Design Review has been completed. TECHEVAL is scheduled for FY2001 with OPEVAL following in FY2002. Functionality on the F/A-18C/D will be with OFP 17C.

MODIFICATION TITLE: Common Configuration (OSIP 19-94)

MODELS OF SYSTEM AFFECTED: F/A-18 A/B/C/D

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
INSTALLATION KITS																									
NI818/CVRS	219	1.9			95	1.0																		314.0	2.9
CDII-045/VPM("O"Level")	559	57.0																						559.0	57.0
CDII-051/VPM("O"Level")			47	4.4	30	3.1	123	11.6	19	1.8														219.0	20.8
INSTALLATION KITS N/R		0.5		17.0		3.2		1.9		2.5		3.5		3.0		1.6		1.4		1.5					36.1
INSTALLATION EQUIP.																									
NI818/CVRS																									
CDII-045/VPM("O"Level")																									
CDII-051/VPM("O"Level")	291	6.9		0.7																				291.0	7.6
ATFLIR									7	21.7	9	22.1	13	28.3	18	36.1	23	44.5	27	51.4	83	157.2	180.0	361.2	
INSTALLATION EQUIP. N/R										2.2				1.0											3.2
ENGINEERING CHANGE ORDERS									0.7		0.7		1.2		1.7										4.3
DATA					2.1		2.6		0.6		1.2		0.8		0.6		0.5		0.5						9.0
TRAINING EQUIPMENT							0.3		1.1		3.4		2.1		0.7		0.5		0.4						8.5
SUPPORT EQUIPMENT		3.5		7.4		7.8		5.4		3.3		6.8		2.2		4.1		18.2		22.8					81.5
ILS		1.0		0.1		0.8		0.8		8.7		7.3		10.0		7.2		4.5		6.9					47.3
OTHER SUPPORT																									
INTERMIN CONTRACT SUPPORT															1.6		2.0								3.6
Installation Cost	66	0.8	93	1.2	60	0.9			95	1.4														314	4.2
TOTAL PROCUREMENT		71.5		30.7		19.0		22.5		44.0		45.0		48.7		53.6		71.5		83.5		157.2		647.1	

Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F/A-18 A/B/C/D MODIFICATION TITLE: Common Configuration (OSIP 19-94)

METHOD OF IMPLEMENTATION: CVRS - FIELD MOD TEAM; VPM - 'O' LEVEL; ATFLIR - "O" LEVEL

ADMINISTRATIVE LEADTIME: 5 Months PRODUCTION LEADTIME: 16 Months

CONTRACT DATES: FY 1998: Oct-97 FY 1999: Jun-99 FY 2000: N/A

DELIVERY DATE: FY 1998: Oct-98 FY 1999: Oct-00 FY 2000: N/A

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1996 & PY (219) kits	66	0.8	93	1.2	60	0.9																		219	2.8
FY 1997 () kits																									
FY 1998 (95) kits									95	1.4														95	1.4
FY 1999 (0) kits																									
FY 2000 (0) kits																									
FY 2001 (0) kits																									
FY 2002 (0) kits																									
FY 2003 (0) kits																									
To Complete (0) kits																									
TOTAL	66	0.8	93	1.2	60	0.9	0	0.0	95	1.4													314	4.2	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	159	15	15	15	15	0	0	0	0	24	24	24	23	0	0	0	0	0	0	0	0	0	0	0	0
Out	159	15	15	15	15	0	0	0	0	24	24	24	23	0	0	0	0	0	0	0	0	0	0	0	0

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	0	0	0	0	0	0	0	0	0	314
Out	0	0	0	0	0	0	0	0	0	314

INDIVIDUAL MODIFICATION

MODIFICATION TITLE: **F/A-18 Global Positioning System (GPS) (OSIP 36-94)**

MODELS OF SYSTEM AFFECTED: **F/A-18A/B/C&D Aircraft**

TYPE MODIFICATION: **SAFETY / CAPABILITY IMPROVEMENT**

DESCRIPTION/JUSTIFICATION:

GPS (ORD# 401-88-95) is a space-based worldwide radio navigation aid that provides precise position, velocity, and time data under all-weather conditions twenty-four hours a day, and is proposed to replace land-based TACAN. Incorporation of the GPS in the F/A-18 aircraft provides the following: accurate navigation position and velocity, precision close air support, onboard sensor positioning, command and control guidance, search and rescue guidance, accurate all-weather air drops and accurate time standard.

The F/A-18 GPS requirements will be satisfied with EGI by retrofitting the EGI into Lot VI through Lot IX. F/A-18C/D requirements will be satisfied with the Miniature Airborne GPS Receiver (MAGR), by retrofitting Lot X through Lot XVI, and forward fitting into Lot XVII through Lot XXI.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

The Embedded Global Positioning System (GPS) and Inertial Navigation System (INS) (EGI) program is a joint multi-user NDI acquisition which achieved Milestone III in FY94. Contract award was 4 March 1994, with Engineering Design Review completed in July 1994.

The Embedded GPS/INS (EGI) system was supposed to be an NDI system, however, it has required a significant amount of development, which has resulted in schedule slips. As a result, F/A-18 has been adversely impacted in the following areas:

1. F/A-18A/B/C/D can no longer meet the Congressional mandate to have GPS installed in all A/C by the year 2000.
2. F/A-18 Mission Computer S/W testing to incorporate EGI functionality has experienced continual slips due to EGI hardware immaturity.
3. The immaturity of the EGI has resulted in a delay of the Validation and Verification (Val/Ver) of the EGI A-Kits in all versions of the F/A-18.
4. Since Val/Ver has slipped, EGI A-Kits though on order cannot be manufactured and delivered until Val/Ver can be completed.

As a result of the above impacts, a decision was made to install the Miniature Airborne GPS Receiver (MAGR) in F/A-18 C/D Lot X through Lot XVI A/C. MAGR is a lower risk option and has been installed as a forward fit in Lot XVII and above A/C. Since EGI performance has not completed testing, MAGR is the only option that ensures the most rapid, low risk retrofit.

This plan results in the least impact to further F/A-18C/D modifications.

Furthermore, a decision was also made to continue with the development of the EGI in order to meet GPS requirements for the F/A-18A/B (Lot IX and below) and future E/F A/C. F/A-18 A/B's cannot be retrofitted with a MAGR integration due to space restrictions and airframe differences.

In summary, F/A-18 has had to develop new integration plans for GPS that now include the integration of both MAGR and EGI. EGI A-Kits were put on order using FY96/97/98 funding based on an NDI assumption, however due to above mentioned reasons, the EGI A-Kits now need to be converted to MAGR A-Kits with no pricing impact. The procurement of MAGR B-Kits to catch up with converted MAGR A-Kits has resulted in F/A-18 not meeting the full funding requirement while protecting the risk and schedule of this high visibility program.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL				
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$			
RDT&E																											
PROCUREMENT																											
Installation Kits																											
Lots VI - IX GPS kits	52	3.9	15	1.1			38	0.5	38	0.5												76	6.1	219	12.2		
Lots X - XVI GPS kits	113	1.5	169	2.3	45	0.6	99	1.3	38	0.5															464	6.3	
Installation Kits N/R		12.7		3.4		2.2		3.7		0.1																	22.1
Installation Equipment							150	3.8	80	2.0	130	3.3	104	2.6												464	11.6
Installation Equipment N/R																											
Engineering Change Orders																											
Data																											
Training Equipment		2.0																									2.0
Support Equipment		1.4		0.4																							1.8
ILS		0.1		0.1		0.1		0.3		0.3		0.3		0.3													1.6
Other Support																											
Interim Contractor Support																											
Installation Cost							2	0.1	180	6.3	156	4.7	165	6.0	104	3.0							76	4.6	683	24.7	
TOTAL PROCUREMENT		21.7		7.3		2.9		9.8		9.7		8.2		8.9		3.0							10.6		82.1		

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F/A-18A/B/C&D Aircraft MODIFICATION TITLE: F/A-18 Global Positioning System (GPS) (OSIP 36-94)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Navy Depot Field Mod Teams at five (5) locations.

ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 26 Months

CONTRACT DATES: FY 1999: Mar-97 FY 2000: Mar-98

DELIVERY DATE: FY 1999: May-99 FY 2000: May-00

(\$ in Millions)

Cost:	Prior Years		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 1996 & PY (165) kits					2	0.1	163	5.8									165	5.9
FY 1997 (184) kits							17	0.5	156	4.7	11	0.4					184	5.6
FY 1998 (45) kits											45	1.6					45	1.6
FY 1999 (137) kits											109	4.0	28	0.8			137	4.8
FY 2000 (76) kits													76	2.2			76	2.2
FY 2001 () kits																		
FY 2002 () kits																		
FY 2003 () kits																		
To Complete (76) kits															76	4.6	76	4.6
TOTAL	0	0.0	0	0.0	2	0.1	180	6.3	156	4.7	165	6.0	104	3.0	76	4.6	683	24.7

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	0								2	45	45	45	45	39	39	39	39	44	43	39	39	39	39	26	
Out	0								2	45	45	45	45	39	39	39	39	44	43	39	39	39	39	26	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In									76	683
Out									76	683

Exhibit P-3a

INDIVIDUAL MODIFICATION

MODIFICATION TITLE: **AN/APG-73 RADAR UPGRADE (RUG) PHASE I & RUG PHASE II (OSIP 38-94)**

TYPE MODIFICATION: **CAPABILITY IMPROVEMENT**

MODELS OF SYSTEM AFFECTED **F/A-18 C&D Aircraft**

DESCRIPTION/JUSTIFICATION:

THE F/A-18 radar (AN/APG-65), requires an upgrade to improve electronic counter-countermeasure (ECCM) performance against improved threat electronic countermeasures (ECM). This threat ECM improvement has partially resulted from compromises in the F/A-18 radar performance against various threat electronic warfare systems. The AN/APG-73 radar follows and capitalizes on AN/APG-70 and AN/APG-71 developmental and value engineering programs to maximize shop replaceable assembly (SRA) commonality. ORD # 199-05-88 (Radar Upgrade Phase I) and ORD # 022-05-83 (Radar Upgrade Phase II).

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Forward fit of the AN/APG-73 was incorporated into Lot 16 (Block 43) and subsequent aircraft. Rug Phase I was approved for full rate production of retrofit units in September 1996. This OSIP reflects retrofit of Lot 14 through Lot 16 (Block 42) aircraft. A Pre-planned Product Improvement (P3I) Phase II to the RUG program developed improved hardware and software for an all-weather Reconnaissance (RECCE) strip map mode. Additional modes can be incorporated with software changes as required in the future. Development of RUG Phase II completed in FY 1998 and retrofit procurements began in FY 1999.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
RTD&E (0204136NE2065)		219.6		20.3		2.2																			242.1	
PROCUREMENT																										
Installation Kits																										
ECP 508 / RUG - Phase I Kit	12	27.4	4	6.3	4	8.5	5	10.2	19	38.4	7	14.3	8	16.1	0	0.0	4	8.4	4	8.4	0	0.0			67	138.0
ECP 569 / RUG - Phase II Kit							7	3.7	7	3.7	7	3.7	7	3.6	6	3.0	0	0.0							34	17.7
Installation Kits N/R		0.3				4.8		0.4																		5.5
ECP 508 / RUG - Phase I Kit																										
ECP 569 / RUG - Phase II Kit																										
Installation Equipment																										
ECP 508 / RUG - Phase I Equip																										
ECP 569 / RUG - Phase II Equip																										
Installation Equipment N/R																										
Engineering Change Orders																										
Data																										
Training Equipment																										
Support Equipment				1.3		1.8		0.9																		4.1
ILS		0.2					3.2				0.6		0.0		1.1		1.9		0.4							7.3
Other Support																										
Interim Contractor Support																										
Installation Cost	5	0.1	5	0.1	3	0.0	6	0.1	6	0.1	19	0.4	7	0.2	8	0.2	0	0.0	4	0.1	4	0.1			67	1.4
TOTAL PROCUREMENT		28.0		7.8		15.1		18.6		42.2		18.9		19.9		4.3		10.3		8.9		0.1			174.1	

Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F/A-18 C&D Aircraft MODIFICATION TITLE: AN/APG-73 RADAR UPGRADE (RUG) PHASE I & RUG PHASE II (OSIP 38-94)

METHOD OF IMPLEMENTATION: Phase I kits are Depot Level; Phase II kits are Organization level. Schedule below reflect RUG Phase I installs only.

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 9 Months

CONTRACT DATES: FY 1999: Jan-99 FY 2000: Jan-00

DELIVERY DATE: FY 1999: Jan-00 FY 2000: Oct-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL				
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$			
FY 1996 & PY (12) kits	5	0.1	5	0.1	2	0.0																		12	0.2		
FY 1997 (4) kits					1	0.0																			4	0.1	
FY 1998 (4) kits							3	0.0																	4	0.1	
FY 1999 (5) kits								3	0.1	1	0.0														5	0.1	
FY 2000 (19) kits										5	0.1															19	0.4
FY 2001 (7) kits												19	0.4													7	0.1
FY 2002 (8) kits													7	0.1												8	0.2
FY 2003 (0) kits															8	0.2										0	0.0
FY 2004 (4) kits																			4	0.1						4	0.1
FY 2005 (4) kits																					4	0.1				4	0.1
To Complete (0) kits																							4	0.1		0	0.0
TOTAL	5	0.1	5	0.1	3	0.0	6	0.1	6	0.1	19	0.4	7	0.1	8	0.2	0	0.0	4	0.1	4	0.1	4	0.1	67	1.4	

(\$ in Millions)

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	10	1	1	0	1	2	1	0	3	1	0	3	2	0	0	10	9	0	0	0	7	0	0	4	4
Out	10	1	1	0	1	2	1	0	3	1	0	3	2	1	0	9	9	0	0	0	7	0	0	4	4

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	0	0	0	0	0	0	4	0	4	67
Out	0	0	0	0	0	0	4	0	4	67

MODIFICATION TITLE: POSITIVE IDENTIFICATION SYSTEM (OSIP 12-96)

MODELS OF SYSTEM AFFECTED: F/A-18 C/D Aircraft

TYPE MODIFICATION: AVIONICS CAPABILITY IMPROVEMENT

DESCRIPTION/JUSTIFICATION:

The Positive Identification System (PIDS) will allow the F/A-18 to positively identify another aircraft. The requirement for positive identification of enemy and friendly aircraft arose from Desert Storm lessons learned and is a CNO high priority issue. Although Lot applicability is back to Lot X, FYDP funding represents an affordable plan. ORD# 446-88-96

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Forward fit of the PIDS (CIT) for the F/A-18 began in FY 1995 with the last block of Lot 19 aircraft. Retrofit kit procurement started in FY 1996 with 21 kits. These kits were installed in FY 1998. Software integration will be with Operational Flight Program (OFP) 13C.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E (0204136N/E1662)		10.0		1.8		0.8																			13
PROCUREMENT																									
Installation Kits	21	6.3	28	8.5	17	5.0	29	8.7	9	2.7												440	132.0	544	163.2
Installation Kits N/R		2.0		2.0		1.1		0.3																	5.5
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data		0.4		0.4																					0.7
Training Equipment				2.1				0.7																	2.8
ILS		0.5		0.5		0.5		0.4	0.1		0.3		0.0												2.3
Support Equipment		5.0						0.4																	5.4
Other Support																									
Interim Contractor Support																									
Installation Cost					0	0.0	35	1.0	31	1.0	29	1.0	9	0.3								440	14.5	544	17.8
TOTAL PROCUREMENT		14.2		13.6		6.6		11.4		3.8		1.3		0.3											197.7

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F/A-18 C/D Aircraft MODIFICATION TITLE: POSITIVE IDENTIFICATION SYSTEM (OSIP 12-96)

INSTALLATION INFORMATION: _____

METHOD OF IMPLEMENTATION: INSTALLATION WILL BE BY PRIVATE/PUBLIC COMPETITION AND AT NADEPs JAX AND NORIS BY FMT

ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 19 Months

CONTRACT DATES: FY 1998: 3/98 FY 1999: 3/99 FY 2000: 3/00

DELIVERY DATE: FY 1998: 10/99 FY 1999: 10/00 FY 2000: 10/01

(\$ in Millions)

Cost:	Prior Years		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1996 & PY (21) kits					21	0.6																21	0.6
FY 1997 (28) kits					14	0.5	14	0.5														28	0.9
FY 1998 (17) kits							17	0.6														17	0.6
FY 1999 (29) kits									29	1.0												29	1.0
FY 2000 (9) kits											9	0.3										9	0.3
FY 2001 () kits																							
FY 2002 () kits																							
FY 2003 () kits																							
To Complete (440) kits																				440	14.5	440	14.5
TOTAL	0.0	0.0	0	0.0	35	1.0	31	1.0	29	1.0	9	0.3							440	14.5	544	17.8	

Installation Schedule

FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	0				8	9	9	9	9	9	9	4	8	8	8	5	9							
Out	0				8	9	9	9	9	9	9	4	8	8	8	5	9							

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In									440	544
Out									438	542

MODIFICATION TITLE: **F/A-18 Advanced Tactical Airborne Reconnaissance System (ATARS) (OSIP 3-97)**

MODELS OF SYSTEM AFFECTED: **F/A-18D(RC) Aircraft**

TYPE MODIFICATION: **OPERATIONAL UPGRADE**

DESCRIPTION/JUSTIFICATION:

The need for a modern reconnaissance capability for the Navy and Marine Corps was clearly demonstrated during Operation Desert Shield/Desert Storm. Specific deficiencies noted were: poor connectivity with coalition forces, no wide-area standoff or all weather reconnaissance, and insufficient quantities of reconnaissance platforms. Lessons learned emphasized the value of timely imagery intelligence to support the tactical commander's concept of operations. In order to provide low to medium altitude, day/night, penetrating under-the weather overflight imagery to meet the Operational Requirement for the Navy and Marine Corps, the Navy is capitalizing on the work accomplished in the former ATARS Program and is leveraging the Air Force investment in ATARS to develop an ATARS-based Tactical Reconnaissance System for the F/A-18.

ATARS is a real-time/near real-time sensor suite for image acquisition, data storage, and data link. It consists of infrared and visible light sensors, two digital tape recorders, a digital data link, and a reconnaissance management system. The digital data link will transmit imagery and auxiliary data to the Joint Services Imagery Processing System (JSIPS) based ashore or to the JSIPS-N aboard ship. ORD # 427-88-96 (Reconnaissance Capable F/A-18).

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Aircraft provisions to permit installation of a reconnaissance capability in the F/A-18 started in 1983, with the design and development of an engineering change to the F/A-18 which would allow internal carriage of reconnaissance sensors. This change was incorporated in the F/A-18D in 1992. All F/A-18Ds delivered after 1992 will contain the reconnaissance modification in their baseline configuration. Thirty-five F/A-18D(RC) aircraft have been delivered to the Marine Corps as of May 1994. Development of the Advanced Tactical Airborne Reconnaissance System (ATARS) began in 1988 with the Air Force as the lead service. ATARS was developed as a common reconnaissance system for use by the Air Force, Navy, and Marine Corps in both manned and unmanned platforms. The Air Force and the ATARS prime contractor mutually agreed to a cessation of effort on the ATARS contract in June 1993. In September 1993, the DoN conducted a quick-look evaluation of the ATARS equipment, in an "as is" condition, in the F/A-18. This evaluation indicated that the ATARS equipment has genuine potential to satisfy the Navy and Marine Corps overflight reconnaissance requirement in the F/A-18. When the USAF ceased its ATARS effort, ATARS contractor flight testing was complete and ATARS DT&E in the RF-4C was approximately 40% complete. Transition of all the equipment procured under the former ATARS contract from the Air Force to the DoN has been completed. The majority of the former ATARS equipment requires relatively little development to complete, however, the digital tape recorder has not met its performance or reliability requirements. A replacement non-developmental tape recorder will be integrated. System software and Built-in-test need further development and maturation to complete system integration. An integrated logistics support program will be developed for the F/A-18. Non-recurring production engineering is required to transition the ATARS-based engineering design models to a final production configuration. Development and fielding of an ATARS-based sensor suite will be continued as a streamlined management program. The program will be tailored to build on the past development to expedite the fielding of an overflight sensor suite in the F/A-18D(RC). The sensor suite is being integrated into the F/A-18D(RC) and procured as a fieldable prototype system to meet U.S. Marine Corps requirements. The remaining 31 ATARS-based systems were placed on contract in February 1997 with deliveries having begun in the third quarter of FY-98.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002	FY 2003	FY 2004	FY 2005	To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$					Qty	\$	Qty	\$	
RDT&E 0603261N/E0534		181.6		27.5		10.3		1.5													220.9
PROCUREMENT																					
Installation Kits			5	33.3	12	47.1	6	31.5	17	54.6	14	12.5					8	12.7	62	191.7	
Installation Kits N/R				24.7		9.1															33.8
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment				2.1		1.0		6.6		0.4		0.2									10.4
ILS				2.0		1.0		1.7		1.1		2.7									8.5
Other Support (Testing)								1.4				9.0									10.4
Interim Contractor Support																					
Installation Cost																					
TOTAL PROCUREMENT		0.0		62.1		58.2		41.2		56.2		24.3								12.7	254.7

* INSTALL KIT COMPONENTS BREAKOUT:

ATARS SUITES	4	6	5	16	0	0	0	31
DATA LINK PODS	0	4	0	0	12	8	24	
SQUADRON GROUND STATIONS	1	2	1	1	2	0	7	

INDIVIDUAL MODIFICATION

MODIFICATION TITLE: **F/A-18A+ Avionics Upgrade for the U.S. Naval Reserve ECP-560 (OSIP 23-98)**

MODELS OF SYSTEM AFFECTED: **F/A-18A**

TYPE MODIFICATION: **Avionics Upgrade**

DESCRIPTION/JUSTIFICATION:

This ECP is being executed using FY96 NGRE funding (\$21.2M) to procure some of the required Government Furnished Equipment (GFE) and APN-5 funding as shown on this exhibit. The FY98 funding is a result of a Congressional add in the FY98 Appropriations Act.

Upgrade Avionics for F/A-18A Hornets (Lots 8 and 9) for the U.S. Naval Reserve Force. The Avionics Upgrade includes new avionic subsystems already incorporated or in process of being incorporated into USN/USMC and/or FMS F/A-18 aircraft. This ECP incorporates the following subsystems: AN/ARC-210(V) with HAVEQUICK II and SINGGARS; Digital Communication Systems (DCS) Receiver/Transmitter (RT-1794); Mission Computer CP-2360 (XN-8); Stores Management Set (SMS) (AN/AYQ-9); AMRAAM Capability (radar mod, launchers, weapons pylons and control stick); Digital Display Indicator (DDI) Upgrade; Mission Data Loader (AN/ASQ-215); Targeting FLIR provisions (AAS-38B).

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

The ECP was approved in March 1998. All the equipment being incorporated in this ECP has completed development with the exception of DCS. DCS completes its development/integration with OPEVAL scheduled for the first quarter of FY2000 along with OFP 15C.

FINANCIAL PLAN (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits					28	6.5																		28	6.5
Installation Kits N/R						4.9		0.7																	5.6
Installation Equipment					228	12.3	162	3.3																390	15.6
Installation Equipment N/R																									
Engineering Change Orders																									
Data								0.1																	0.1
Other Support (Testing)								0.5		0.8															1.2
Support Equipment								1.1																	1.1
ILS						0.2		0.1		0.0		0.1													0.4
Interim Contractor Support																									
Installation Cost								1*	0.0	1.8	6.2	9	3.0											28	9.2
TOTAL PROCUREMENT						24.0		5.8		7.0		3.1													39.8

* FY99 Install Kit is VALVER

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F/A-18A MODIFICATION TITLE: F/A-18A+ Avionics Upgrade for the U.S. Naval Reserves

INSTALLATION INFORMATION: APPROX 3 KITS INSTALLED EVERY 6 WEEKS (ECP-560) (OSIP 23-98)

METHOD OF IMPLEMENTATION: ONE KIT INSTALLED BY CONTRACTOR FOR VALVER, OTHER INSTALLS TBD

ADMINISTRATIVE LEAD-TIME: 3 Months PRODUCTION LEAD-TIME: 18 Months

CONTRACT DATES: FY 1998: 09/98 FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: 03/00 FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1996 & PY () kits																								0	0.0	
FY 1997 () kits																									0	0.0
FY 1998 (28) kits							1	0.0		18	6.2		9	3.0											28	9.2
FY 1999 () kits																									0	0.0
FY 2000 () kits																									0	0.0
FY 2001 () kits																									0	0.0
FY 2002 () kits																									0	0.0
FY 2003 () kits																									0	0.0
To Complete () kits																									0	0.0
TOTAL		0	0.0	0	0.0	0	0.0	1*	0.0	18	6.2	9	3.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	28	9.2	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	0	0	0	0	0	0	0	0	1	0	6	6	6	3	3	3	0	0	0	0	0	0	0	0	0
Out	0	0	0	0	0	0	0	0	0	1	6	6	6	3	3	3	0	0	0	0	0	0	0	0	0

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	0	0	0	0	0	0	0	0	0	28
Out	0	0	0	0	0	0	0	0	0	28

* NOTE: VALVER installation is incorporated into the "A" Kit procurement contract and the cost is included as part of the Installation Kits Non-Recurring in FY98.
 * FY99 Install Kit is VALVER

Exhibit P-3a

INDIVIDUAL MODIFICATION

MODIFICATION TITLE: **DIGITAL COMMUNICATIONS SYSTEM (DCS) (OSIP 10-99)**

MODELS OF SYSTEM AFFECTED F/A-18 C/D Aircraft (Lots 10-21)

TYPE MODIFICATION: CAPABILITY IMPROVEMENT

DESCRIPTION/JUSTIFICATION:

The Digital Communications System (DCS) will consist of an upgraded AN/ARC-210 Receiver Transmitter (RT) [with embedded digital message transfer capability and embedded Communications Security (COMSEC)] installed in the F/A-18 and integrated with the F/A-18 weapons system [mission computer, controls & displays, and communication subsystem]. The DCS will utilize preformatted messages to communicate with standard USMC, USA, and USAF digital communications devices to facilitate Close Air Support (CAS), Deep Air Strike (DAS), and Tactical Air Control (TAC) missions. DCS will reduce voice communications requirements which tend to be slow, inaccurate, and susceptible to Meaconing, Interference, Jamming, and Intrusion (MIJI). DCS will enhance mission effectiveness by decreasing pilot workload which allows the pilot more time to counter increased threat capabilities. ORD# 486-88-98.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

The AN/ARC-210 RT is being upgraded to a DCS RT. Initial Engineering Developmental Model (EMD) was delivered (using RDT&E,N resources) in FY1998 as scheduled. The F/A-18C/D requirements will be satisfied by retrofitting DCS into Lot X through Lot XXI. Functionality is in Operational Flight Program (OFP) 15C scheduled for fleet release in FY2000. Initial procurement of installation kits is anticipated to be awarded June 1999. F/A-18C/D Lots X and XI require an ACI and DCS radio. The funding on the installation equipment line is for the ACI only.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TO COMPLETE		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
RDT&E (0204136N/E1662)		31.5																							31.5	
PROCUREMENT																										
Installation Kits							24	0.5	64	1.3	64	1.3	106	3.0	106	3.0	106	3.3	62	2.5	44	2.7			576	17.6
Installation Kits N/R								1.7																	1.7	
Installation Equipment													24	1.6	24	1.5	24	1.5	29	2.2	40	2.4			141	9.2
Installation Equipment N/R																										
Engineering Change Orders																										
Data								0.6					0.3												0.9	
Training Equipment								1.3																	1.3	
Support Equipment								0.7					0.2												0.8	
ILS								0.6					0.3	0.6	0.3		0.0		0.0				0.0		1.3	
Other Support																										
Interim Contractor Support																										
Installation Cost											0.0		0.1		0.2		1.0		1.0		3.4				5.8	
TOTAL PROCUREMENT		0.0						5.3	1.3		1.3		5.5		5.1		5.8		5.7		8.5				38.5	

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F/A-18 C/D Aircraft (Lots 10-21)

MODIFICATION TITLE: DIGITAL COMMUNICATIONS SYSTEM (DCS) (OSIP 10-99)

METHOD OF IMPLEMENTATION: DEPOT FIELD MODIFICATION TEAM (FMT)

ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 18 Months

CONTRACT DATES: FY 1999: 3/99 FY 2000: 3/00

DELIVERY DATE: FY 1999: 10/00 FY 2000: 10/01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1996 & PY () kits																									
FY 1997 () kits																									
FY 1998 () kits																									
FY 1999 (24) kits											12	0.0	12	0.0										24	0.1
FY 2000 (64) kits													32	0.1	32	0.1								64	0.2
FY 2001 (64) kits															32	0.1	32	0.1						64	0.2
FY 2002 (106) kits																	74	0.9						106	1.0
FY 2003 (106) kits																			74	0.9	32	0.1		106	1.3
FY 2004 (106) kits																					106	1.5		106	1.5
FY 2005 (62) kits																					62	0.9		62	0.9
To Complete (44) kits																					44	0.6		44	0.6
TOTAL		0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	12	0.0	44	0.1	64	0.2	106	1.0	106	1.0	244	3.4	576	5.7

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	0												3	3	3	3	12	12	10	10	16	16	16	16	
Out	0												3	3	3	3	12	12	10	10	16	16	16	16	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	25	26	27	28	27	27	26	26	244	576
Out	25	26	27	28	27	27	26	26	244	576

INDIVIDUAL MODIFICATION

MODIFICATION TITLE: F/A-18 Aircraft Service Life Extension Program (SLEP) (OSIP 11-99) ST-16

MODELS OF SYSTEM AFFECTED: F/A-18 B/C/D TYPE MODIFICATION: SAFETY / LIFE EXTENSION

DESCRIPTION/JUSTIFICATION:

Incorporation of structural enhancements and changes identified during Structural Testing (ST-16), that are required to attain the F/A-18 design service life of 6,000 fatigue hours. Six thousand hours fatigue life will maintain the F/A-18 aircraft inventory in sufficient quantities to meet fleet operational commitments and requirements. The unacceptable alternative to retrofitting would be the failure to reach full fatigue life for the aircraft and to not correct the structural defects discovered on fatigue test articles. In many cases, the mission capability of the aircraft would be adversely affected in addition to its reduced service life. As a result, aircraft may be prematurely removed from useful service. ECP-536 is applicable to F/A-18 As as well as to F/A-18B/C/Ds. However, these modifications will not be made to F/A-18As for affordability reasons as well as limited time remaining in inventory

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

MDA and NGC are developing a retrofit ECP to modify all aircraft between Lots VI and XVI to realize a full life airframe. Currently all Lot VI through XVI aircraft have 78% life limits without the SLEP modifications to bring them to 100% airframe life. ECP 536 has been approved and Validation/Verification will be completed by June 1999.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits							6*	3.0	6**	3.0	9***	6.2	10	7.0	17	12.2	19	13.9	20	14.9	222	169.4	309	229.6	
Installation Kits N/R								1.1		1.1		0.4												2.6	
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data								0.3																0.3	
Training Equipment																									
Support Equipment																									
ILS								2.5		3.3		2.8		3.5		3.7		4.7		4.8		158.7		183.9	
Other Support																									
Interim Contractor Support																									
Installation Cost							1****	0.7	5	3.3	6	4.0	9	5.9	10	6.6	17	11.2	19	12.6	242	278.1	309	322.4	
TOTAL PROCUREMENT								7.6		10.7		13.3		16.4		22.4		29.9		32.3		606.1		738.8	

* QUANTITY INCLUDES CONTRACTOR PROVIDING 6 FY98 WARRANTY KITS AT A REDUCED PRICE.
 ** QUANTITY INCLUDES CONTRACTOR PROVIDING 6 FY99 WARRANTY KITS AT A REDUCED PRICE.
 *** QUANTITY INCLUDES CONTRACTOR PROVIDING 3 FY00 WARRANTY KITS AT A REDUCED PRICE.
 **** VAL/VER KIT REQUIRED FOR TESTING.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F/A-18 B/C/D MODIFICATION TITLE: F/A-18 SERVICE LIFE EXTENSION PROGRAM

INSTALLATION INFORMATION: CONTRACTOR PROVIDING 9 WARRANTY KITS (SLEP) (OSIP 11-99) ST-16

METHOD OF IMPLEMENTATION: ONE KIT INSTALLED BY CONTRACTOR FOR VAL/VER, OTHER INSTALLS BY DEPOT

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 10 Months

CONTRACT DATES: FY 1999: 12/98 FY 2000: 12/99

DELIVERY DATE: FY 1999: 10/99 FY 2000: 10/00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1996 & PY () kits																								0	0.0	
IN WARRANTY () kit																									0	0.0
FY 1998 () kits																									0	0.0
FY 1999 (6) kits							1	0.7	5	3.3														6	4.0	
FY 2000 (6) kits											6	4.0												6	4.0	
FY 2001 (9) kits												9	5.9											9	5.9	
FY 2002 (10) kits														10	6.6									10	6.6	
FY 2003 (17) kits																17	11.2							17	11.2	
FY 2004 (19) kits																	19	12.6						19	12.6	
FY 2005 (20) kits																				20	13.2			20	13.2	
To Complete (222) kits																					222	259.6		222	259.6	
TOTAL	0	0.0	0	0.0	0	0.0	1	0.7	5	3.3	6	4.0	9	5.9	10	6.6	17	11.2	19	12.6	242	272.8	309	317.2		

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	0	0	0	0	0	1	0	0	0	1	1	1	2	1	1	2	2	3	2	2	2	3	3	2	2
Out	0	0	0	0	0	0	0	1	0	1	1	1	1	2	1	1	1	2	2	3	2	2	3	3	2

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	5	4	4	4	5	5	5	4	242	309
Out	2	5	4	4	4	5	5	5	246	309

INDIVIDUAL MODIFICATION

MODIFICATION TITLE: MULTIFUNCTIONAL INFORMATION DISTRIBUTION SYSTEM (MIDS) (OSIP 12-99)

MODELS OF SYSTEM AFFECTED: F/A-18 C/D/E/F

TYPE MODIFICATION: CAPABILITY IMPROVEMENT

DESCRIPTION/JUSTIFICATION:

The system is a Tactical Data Link Communications to provide a secure communications and navigation system. MIDS-LVT is a Pre-planned Product Improvement (P3I) to the Joint Tactical Information Distribution System (JTIDS) and will be installed in USN/USMC F/A-18 aircraft as the primary U.S. platform, since the aircraft cannot accommodate the larger JTIDS Class 2 terminals due to size and weight constraints. MIDS-LVT is an International Cooperative Program (ICP) development with France, Germany, Italy, and Spain. A PMOU and Supplement 1 is in effect. The system will be interoperable with JTIDS class 2 terminals utilized by NATO allies as well as the other services. ORD# 337-06-93

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

A MIDS installation kit Critical Design Review (CDR) was held at MDA in September 1996. MIDS terminal initial Engineering and Manufacturing Development (E&MD) delivery for F/A-18 occurred in February 1998. Installation into the first of 3 EMD aircraft began in March 1998 at MDA. Delivery of the first modified aircraft to the Government is scheduled for April 1998. Development delays have caused a program restructure, necessitating the use of FY99 funds to procure hardware in FY00. This supports the revised program schedule and eliminates FY00 funding for the MIDS-LVT procurement and production start-up costs.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits							28	4.6	69	11.1	82	13.5	55	9.4	64	10.9	82	14.9	67	12.2				447	76.7
Installation Kits N/R																									
Installation Equipment (Note 1)							28	15.6	69	10.5	82	33.3	55	26.1	64	32.8	82	34.0	64	26.2				444	178.4
Installation Equipment N/R								18.1		0.0		10.7													18.1
Engineering Change Orders												2.1		4.5		3.8		3.0							11.3
Data											3.2		3.1												6.3
Training Equipment												2.1		2.3											4.4
Support Equipment											0.5		2.8		3.1		1.7		1.0						9.0
IJS											2.2		1.8		2.1		3.7		1.2		0.2				11.2
Other Support																									
Interim Contractor Support												0.5		1.0		1.0									2.5
Installation Cost											28	1.0	69	2.6	82	3.1	55	2.2	64	2.7	149	6.3	447	18.0	
TOTAL PROCUREMENT								38.3		27.4		70.9		49.9		55.7		55.0		41.4			6.3	344.9	

Note 1: The funding for this line includes the following equipment: MIDS-LVT equipment, an Interference Blanker Unit (IBU); an Amplifier Control Intercommunication unit (ACI); a MIDS Compatible CIT upgrade; and a MIDS Compatible APX-100 upgrade. Quantities reflect the number of aircraft to be upgraded with Depot Level Installation Equipment.

Exhibit P-3a

MODIFICATION TITLE: MULTIFUNCTIONAL INFORMATION DISTRIBUTION SYSTEM (MIDS) (OSIP 12-99)

MODELS OF SYSTEMS AFFECTED: F/A-18 C/D/E/F

METHOD OF IMPLEMENTATION: DEPOT LEVEL

ADMINISTRATIVE LEADTIME: 6 Months

PRODUCTION LEADTIME: 18 Months

CONTRACT DATES: FY 1999: Apr-99 FY 2000: Apr-00

DELIVERY DATE: FY 1999: Oct-00 FY 2000: Oct-01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 () kits																									
FY 1999 (28) kits										28	1.0													28	1.0
FY 2000 (69) kits													69	2.6										69	2.6
FY 2001 (82) kits															82	3.1								82	3.1
FY 2002 (55) kits																	55	2.2						55	2.2
FY 2003 (64) kits																			64	2.7				64	2.7
FY 2004 (82) kits																					82	3.5		82	3.5
FY 2005 (67) kits																					67	2.9		67	2.9
To Complete (0) kits																									
TOTAL																									

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	7	17	17	17	18	20	20	21	21
Out	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	7	17	17	17	18	20	20	21	21

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	14	14	14	13	16	16	16	16	149	447
Out	14	14	14	13	16	16	16	16	149	447

Exhibit P-3a

INDIVIDUAL MODIFICATION

MODIFICATION TITLE: F/A-18 C/D/E/F NACES P3I (Navy Aircrew Common Ejection Seat Pre-Planned Product Improvement) (OSIP 20-99)

MODELS OF SYSTEM AFFECTED: F/A-18 C/D/E/F NACES EJECTION SEATS

TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION:

An average of 15 Naval Aircrew fatalities occur each year from in-flight mishaps. Nearly half result from the seat ejecting crewmembers into the ground or water at low altitude and adverse attitude. Because of their lighter throw weight, women are particularly susceptible to this and other ejection risks. The NACES P3I program is divided into three phases of development and upon completion of each phase, existing aircraft seats will be modified with retrofit kits to provide the increased capability to the NACES seat: Phase I - Current technology improvements to increase cockpit accommodation and reduce injury risk for all aircrew. Phase II - Propulsion stability control to reduce the risk of major injury to less than 5% up to 600 knots. Phase III - Stability control and surface avoidance capability for low altitudes, adverse altitudes, and out-of-control ejections.

Procurement of Phase I kits have been priced and are represented by this OSIP. Procurement costs for Phase II and III have not been determined.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Approval of a retrofit kit ECP is expected by second quarter FY1999 following testing of the validation/verification kit installs.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits							180	4.3	118	2.9	51	1.3									205	5.7	554	14.1	
Installation Kits N/R								1.4		1.1		1.1												3.5	
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data								0.3		0.3		0.2												0.8	
Training Equipment							31	0.9																31	
Support Equipment																									
Other Support																									
Interim Contractor Support																									
Installation Cost							60	0.1	180	0.3	109	0.2									205	0.4	554	0.9	
TOTAL PROCUREMENT								7.0		4.5		2.7									6.0		20.3		

Exhibit P-3a

MODIFICATION TITLE: F/A-18 C/D/E/F NACES P3I (Navy Aircrew Common Ejection Seat Pre-Planned Product Improvement) (OSIP 20-99)

MODELS OF SYSTEMS AFFECTED: F/A-18 C/D/E/F NACES EJECTION SEATS

METHOD OF IMPLEMENTATION: Contractor Modification Team

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 2 Months

CONTRACT DATES: FY 1999: 6-99 FY 2000: 6-00

DELIVERY DATE: FY 1999: 8-99 FY 2000: 8-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 () kits																									
FY 1999 (180) kits							60	0.1	120	0.2														180	0.3
FY 2000 (118) kits									60	0.1	58	0.1												118	0.2
FY 2001 (51) kits											51	0.1												51	0.1
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete (205) kits																						205	0.4	205	0.4
TOTAL							60	0.1	180	0.3	109	0.2									205	0.4	554	0.9	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	0	0	0	0	0	0	0	0	60	20	50	50	60	40	28	25	16	0	0	0	0	0	0	0	0
Out	0	0	0	0	0	0	0	15	40	60	60	60	45	28	25	16	0	0	0	0	0	0	0	0	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	0	0	0	0	0	0	0	0	205	554
Out	0	0	0	0	0	0	0	0	205	554

Exhibit P-3a

INDIVIDUAL MODIFICATION

MODIFICATION TITLE: ALR-67(V)3 Advanced Special Receiver (OSIP 11-00)

MODELS OF SYSTEM AFFECTED: F/A-18 C /D Aircraft TYPE MODIFICATION: AVIONICS UPGRADE

DESCRIPTION/JUSTIFICATION:

The AN/ALR-67 radar receiving set , countermeasures warning and control system (ORD # 360-88-94 / Improved Radar Warning Receiver) is the radar and missile guidance warning system in advanced tactical aircraft. Due to rapid spread of complex fourth generation radar controlled weapons systems in numerous countries throughout the world, AN/ALR-67 (V)3 was started in parallel with AN/ALR-67 (V)2 as the major long term redesign to the ALR-67 system. ALR-67 (V)3 adds significant capability to the ALR-67 with major improvements in frequency sorting, sensitivity, response time, processing power and operating frequency range. ALR-67 (V)3 is designed to handle all scenarios and increased fourth generation threat densities a Navy and/or USMC pilot may face in the early 21st century. The AN/ALR-67(V)3 installation kit in this OSIP can accommodate either the AN/ALR-67(V)3 or the AN/ALR-67(V)2. Until adequate quantities can be procured to meet the 1:1 inventory requirement for F/A-18, the ALR-67 (V)3 systems will be crossdecked to forward deployed units with ALR-67 (V)3 "A" kits installed. "A" kits will be intalled in Lots XII - XVIII and 150 "B" kits will be TYCOM managed assets.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

FY 1999 is the last year of the AN/ALR-67(V)3 Engineering and Manufacturing Development. The R&D efforts will be concluded with OPEVAL, which is being conducted the second quarter FY 1999. A Low Rate Initial Production contract was awarded in third quarter 1998. These systems will be fielded after OPEVAL is complete.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits									30	1.1	24	0.9	32	1.1	34	1.2	34	1.2	34	1.3	171	5.2	359	12.1	
Installation Kits N/R										0.5														0.5	
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data																									
Training Equipment																									
Support Equipment																									
ILS																									
Other Support																									
Interim Contractor Support																									
Installation Cost													30	0.4	24	0.3	24	0.3	24	0.3	257	3.8	359	5.0	
TOTAL PROCUREMENT		0.0		0.0		0.0		0.0		1.6		0.9		1.5		1.5		1.5		1.6		9.0		17.5	

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: **F/A-18 C/D Aircraft**

MODIFICATION TITLE: **ALR-67(V)3 Advanced Special Receiver (OSIP 11-00)**

METHOD OF IMPLEMENTATION: **Installation will be by public/private competition at Naval Aviation Depot by FMT/CMT**

ADMINISTRATIVE LEADTIME: **7 Months** PRODUCTION LEADTIME: **18 Months**

CONTRACT DATES: FY 1999: **N/A** FY 2000: **4/00**

DELIVERY DATE: FY 1999: **N/A** FY 2000: **10/01**

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1996 & PY () kits																									
FY 1997 () kits																									
FY 1998 () kits																									
FY 1999 (0) kits																									
FY 2000 (30) kits													30	0.4											0
FY 2001 (24) kits															24	0.3									24
FY 2002 (32) kits																	24	0.3			8	0.1			32
FY 2003 (34) kits																			16	0.2	18	0.3			34
FY 2004 (34) kits																					34	0.5			34
FY 2005 (34) kits																					34	0.5			34
To Complete (171) kits																					171	2.5			171
TOTAL		0	0.0		0	0.0		0	0.0		0	0.0		30	0.4		24	0.3		24	0.3		24	0.3	257
																									359
																									5.0

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	7	7	6	6	6	6
Out	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	7	7	6	6	6	6

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	6	6	6	6	6	6	6	6	257	359
Out	6	6	6	6	6	6	6	6	257	359

INDIVIDUAL MODIFICATION

MODIFICATION TITLE: **USMC F/A-18A UPGRADE ECP-583 (OSIP 21-00)**

MODELS OF SYSTEM AFFECTED: **F/A-18A**

TYPE MODIFICATION: **Avionics Upgrade**

DESCRIPTION/JUSTIFICATION:

This ECP is being executed using FY98 (\$16M) and FY99 (\$16M) USMC funding to procure the "A" kits and some of the required Government Furnished Equipment (GFE) and APN-5 funding as shown on this exhibit.

Upgrade Avionics for F/A-18A Hornets (Lots 7, 8 and 9) for the U.S. Marine Corp. The Avionics Upgrade includes new avionic subsystems already incorporated or in process of being incorporated into USMC and/or FMS F/A-18 aircraft. This ECP incorporates the following subsystems: AN/ARC-210(V) with HAVEQUICK II and SINGARS; Digital Communication Systems (DCS) Receiver/Transmitter (RT-1794); Combined Interrogator/Transponder AN/APX-111 (V); Night Vision Display System (NVDS); Mission Computer CP-2360 (XN-8); Stores Management Set (SMS) (AN/AYQ-9); AMRAAM Capability (radar mod, launchers, weapons pylons and control stick); Digital Display Indicator (DDI) Upgrade; Mission Data Loader (AN/ASQ-215); Targeting FLIR provisions (AAS-38B).

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

The ECP to CCB 15 MAR 99. All the equipment being incorporated in this ECP has completed development with the exception of DCS. DCS completes its development/integration with OPEVAL scheduled for the first quarter of FY2000 along with OFP 15C.

FINANCIAL PLAN (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Installation Kits N/R																									
Installation Equipment																									
Installation Equipment N/R									34.2		31.7		2.0												67.9
Engineering Change Orders																									
Data									0.1		0.0														0.1
Training											2.6														2.6
Other Support (Testing)									0.1		0.3		0.2												0.6
Support Equipment																									
IIS									0.7		0.7														1.4
Interim Contractor Support																									
Installation Cost											1	0.0	23	9.5											24
TOTAL PROCUREMENT									35.1		35.3		11.7												82.1

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F/A-18A MODIFICATION TITLE: USMC F/A-18A UPGRADE ECP-583 (OSIP 21-00)

INSTALLATION INFORMATION: APPROX 3 KITS INSTALLED EVERY 6 WEEKS (ECP-583) (OSIP 21-00)

METHOD OF IMPLEMENTATION: ONE KIT INSTALLED BY CONTRACTOR FOR VALVER, OTHER INSTALLS TBD

ADMINISTRATIVE LEAD-TIME: 3 Months PRODUCTION LEAD-TIME: 18 Months

CONTRACT DATES: FY 1998: 04/99 FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: 01/01 FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1996 & PY () kits																									
FY 1997 () kits																									
FY 1998 (24) kits*											1	0.0	23	9.5									24	9.5	
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
To Complete () kits																									
TOTAL	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	23	9.5	0	0.0	0	0.0	0	0.0	0	0.0	24	9.5	

* USMC funded "A" Kits

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	6	6	6	5	0	0	0	0
Out	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	6	6	6	6	0	0	0	0

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	0	0	0	0	0	0	0	0	0	24
Out	0	0	0	0	0	0	0	0	0	24

* NOTE: VALVER installation is incorporated into the "A" Kit procurement contract and the cost is included as part of the Installation Kits Non-Recurring in FY98.

* FY01 Install Kit is VALVER

Exhibit P-40, BUDGET ITEM JUSTIFICATION								DATE: February 1999					
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications								P-1 ITEM NOMENCLATURE H-46 Series Modifications					
Program Element for Code B Items:								Other Related Program Elements					
	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
QTY		A											
COST (In Millions)	563.0	A	33.3	33.4	31.6	17.9	13.6	15.4	13.1	12.1	7.2	7.8	748.6
<p>This line item funds modifications to the H-46 aircraft. The H-46 is a twin-turbine powered dual-piloted tandem-rotor helicopter. The cabin contains provisions for accommodating 25 troops and crew members. The cabin also contains an integral cargo and rescue system. The overall goal of the modifications budgeted in FY 2000 is to keep the H-46 a viable platform until a replacement aircraft can be developed and fielded by upgrading the dynamic components, enhancing warfighting capability by providing a night vision goggle heads-up display and improved navigation capability, secure communications, flight critical subsystems, engine control system retrofit, and electrical system upgrade. H-46 helicopters are used by the Marine Corps for troop transport and by the Navy for vertical replenishment of ships. There are currently 312 aircraft (288 active + 24 reserve) in the inventory. USMC: (232) CH-46E + (9) HH-46D. USN: (25) CH-46D + (13) UH-46D + (33) HH-46D. (24) CH-46E's are reserve aircraft. Original Design Service Life was 10,000hrs. It was subsequently extended to 12,500 hrs 18 Dec 92 and 15,000 hrs 16 Feb 96.</p>													
<p>The specific modifications budgeted and programmed are:</p>													
(TOA, \$ in Millions)													
OSIP No.	Description	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
104-87	Block Upgrade	171.1	1.2	0.2									172.5
25-91	Dynamic Component Upgrade	348.0	12.0	15.4	20.5	7.7	3.7	0.9	0.9				409.1
09-92	ARC-210	2.9	0.8	0.8	0.9	0.3						0.3	6.1
19-92	Night Vision Goggle HUD	8.2	2.1	1.3	1.1	1.0							13.7
16-93	Navigation /GPS	32.8	9.9	10.2	6.2	4.0							63.0
25-97	Safety Improvement		7.3	5.0	1.7	0.9	2.3	2.4					19.6
03-98	APR-39A(V) 2			0.6	1.2	0.7	1.0	1.5	1.6	1.6	0.8		9.0
07-00	Engine Control System Retrofit					1.7	4.0	7.1	6.7	6.2	2.4	3.6	31.8
08-00	Electrical System Upgrade					1.6	2.6	3.5	3.9	4.3	4.0	3.9	23.8
	Total	563.0	33.3	33.4	31.6	17.9	13.6	15.4	13.1	12.1	7.2	7.8	748.6
	Reserves			2.0	1.7	0.5	0.2	0.2	0.2	0.2	0.2		
<p>Note: Totals may not add due to rounding.</p>													

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: Block Upgrade (OSIP 104-87)

MODELS OF SYSTEMS AFFECTED: H-46 TYPE MODIFICATION: Upgrade (HONA Category C)

DESCRIPTION/JUSTIFICATION: To upgrade the H-46 by adding additional fuel capacity, a navigation system, and a flotation system.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

1. Fuel: The increased fuel capacity stub wing mod funded by this OSIP is complete.
2. Navigation: The navigation mod funded by this OSIP is complete.
3. Flotation: The flotation mod funded by this OSIP is complete.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
ECP 537 Fuel Kit	246	83.6																					246	83.6	
ECP 544 HEFS KIT	1,816	16.7																					1,816	16.7	
ECP H-46-59 CNCS Nav Kit	3	0.2																					3	0.2	
ECP H-46-41 Omega Nav Kit	96	0.3																					96	0.3	
Installation Kits N/R		31.0		*																				31.0	
Installation Equipment																									
AN/APN-217	67	5.5																					67	5.5	
Cockpit Control System (CSS)	109	5.6																					109	5.6	
HHSI	12	0.8																					12	0.8	
OMEGA AN/ARN-148	96	1.8																					96	1.8	
Installation Equipment N/R																									
Engineering Change Orders																									
Data		2.4																						2.4	
Training Equipment		1.1																						1.1	
Support Equipment		0.1																						0.1	
ILS		0.1																						0.1	
Other Support		2.5																						2.5	
Interim Contractor Support																									
Installation Cost	291	19.5	14	1.2	2	0.2																	307	20.8	
Total Procurement		171.1		1.2		0.2																		172.5	

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: H-46

MODIFICATION TITLE: Block Upgrade (OSIP 104-87)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Concurrent with SDLM, FMT, & DIM

ADMINISTRATIVE LEADTIME: N/A Months

PRODUCTION LEADTIME: N/A Months

CONTRACT DATES: FY 1998: N/A

FY 1999: N/A

FY 2000: N/A

DELIVERY DATE: FY 1998: N/A

FY 1999: N/A

FY 2000: N/A

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1998 & PY (307) kits	291	19.5	14	1.2	2	0.2																			307	20.8
FY 1999 () kits																										
FY 2000 () kits																										
FY 2001 () kits																										
FY 2002 () kits																										
FY 2003 () kits																										
FY 2004 () kits																										
FY 2005 () kits																										
To Complete () kits																										
TOTAL	291	19.5	14	1.2	2	0.2																			307	20.8

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	305		1	1																						
Out	301	4		1	1																					

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										307
Out										307

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: Dynamic Component Upgrade (DCU) (OSIP 25-91)

MODELS OF SYSTEMS AFFECTED: H-46 TYPE MODIFICATION: Safety (HONA Category A)

DESCRIPTION/JUSTIFICATION:

The H-46 helicopter is nearing the end of its originally planned service life. Several dynamic components have failed between 1988 and 1990 due to fatigue. Engineering Change Proposal (ECP)-556 incorporates design improvements to the critical safety items which have been identified by in-service failure and flight strain survey. The changes increase thickness of critical sections, and make other specific changes to increase resistance to fatigue damage. The major components include the forward and aft rotor heads, the forward and aft transmissions, the mixbox, aft vertical rotor shaft, the washplates, and synchronizing shafts. ECP-558 changes configuration of the Aircraft Flight Control System, (AFCS) which reduces flight loads on critical components. The H-46 presently uses the MD-1 and AHRS gyroscopes for pitch and roll rate input to the AFCS. These gyroscopes were originally designed for indication systems only and do not provide adequate input for pitch and roll rate to the AFCS. DCU was directed by Chief of Naval Operations (CNO) letter 13100 serial 504E/OU603293 dated 30 Aug 90, and approved by ASN(RDA) by Program Management Proposal (PMP) 90-7 on 18 Jan 91. As of June 1998, there are 312 H-46 aircraft (288 active plus 24 reserve).

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

The dynamic component fatigue testing commenced in January 1991 and completed in December 1997. The DCU ECP 556 delivered in December 1991, and the AFCS ECP 558 delivered in August 1993. The DCU validation completed in September 1995. The DCU flight testing started in November 1995 and completed in May 1997, and production installations are ongoing. The AFCS flight testing completed in February 1996, verification completed in March 1996, and production installations are ongoing.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
ECP #556	312	213.6																						312	213.6
ECP #558	315	12.6																						315	12.6
Installation Kits N/R		74.8		8.9		0.8																			84.5
Installation Equipment		0.5																							0.5
Installation Equipment N/R																									
Engineering Change Orders																									
Moisture Debris Covers						0.1																			0.1
Wear Plate Blade Attach Fitting						0.2																			0.2
Data		0.9		0.1		*																			1.0
Training Equipment	2	1.3		*																				2	1.4
Support Equipment		3.6		0.1		0.2																			3.9
ILS																									
Other Support		14.4		1.9		2.3		1.3		0.9		0.6		0.5		0.9									22.8
Interim Contractor Support		2.0		0.7																					2.7
Installation Cost	66	24.3		0.4	40	11.8	42	19.2	64	6.8	87	3.1	13	0.4										312	66.0
Total Procurement		348.0		12.0		15.4		20.5		7.7		3.7		0.9		0.9									409.1

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: H-46 MODIFICATION TITLE: Dynamic Component Upgrade (DCU) (OSIP 25-91)

INSTALLATION INFORMATION: **Components will be modified at NADEP Cherry Point concurrent with component overhaul/repair. Rotorheads may be installed in aircraft at O-level. All other components will be installed in aircraft by D-level concurrent with SDLM or by FMT. Quantities reflected in the tables below are aircraft installation quantities; dollar figures in the table include component, GFM, and aircraft installation.**

METHOD OF IMPLEMENTATION: _____

ADMINISTRATIVE LEADTIME: N/A Months PRODUCTION LEADTIME: Varies Months

CONTRACT DATES: FY 1998: N/A FY 1999: N/A FY 2000: N/A

DELIVERY DATE: FY 1998: N/A FY 1999: N/A FY 2000: N/A

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1998 & PY (312) kits	66	24.3		0.4	40	11.8	42	19.2	64	6.8	87	3.1	13	0.4											312	66.0
FY 1999 () kits																										
FY 2000 () kits																										
FY 2001 () kits																										
FY 2002 () kits																										
FY 2003 () kits																										
FY 2004 () kits																										
FY 2005 () kits																										
To Complete () kits																										
TOTAL	66	24.3		0.4	40	11.8	42	19.2	64	6.8	87	3.1	13	0.4											312	66.0

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	2	11	10	11	8	24	21	19	20	28	21	19	18	28	21	20	18	7	6							
Out	2		11	10	11	8	24	21	19	20	28	21	19	18	28	21	20	18	7	6						

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										312
Out										312

Exhibit P-3a **INDIVIDUAL MODIFICATION**

MODIFICATION TITLE: AN/ARC-210 Electronic Counter Countermeasures Radio (OSIP 9-92)

MODELS OF SYSTEM AFFECTED: CH-46E TYPE MODIFICATION: Upgrade (HONA Category C)

DESCRIPTION/JUSTIFICATION:

The AN/ARC-210 is a combination UHF/VHF, AM/FM jam-resistant radio that was developed to allow for ECCM interoperability with the Air Force, Army and NATO. The radio provides dual UHF capability for CV based TACAIR; VHF FM for close air support and maritime channels; VHF AM for air traffic control; and ECCM capabilities using the Air Force developed waveforms (UHF-AM HAVEQUICK I and II), and the Army developed waveform (VHF-FM SINGGARS). The AN/ARC-210 can be controlled by either a remote control unit or via a MIL-STD-1553 multiplex data bus. The ECCM parameters and single channel preset information can be loaded via a CYZ-10 Data Transfer Device (DTD). The fill information can consist of word-of-day for HAVEQUICK; the KGV-10 transec variable, hopsets and frequency lock-out tables for SINGGARS. The ARC-210 Operational Requirements Document (ORD)333-06-93 was approved 20 Apr 93. The ARC-210 installation in the H-46 aircraft was approved by ASN(RDA) by Program Management Proposal (PMP) 90-6 on 18 Jan 91. As of June 1998, there are 232 CH-46E aircraft (208 active + 24 reserve).

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

The AN/ARC-210 will be installed in CH-46E aircraft concurrent with the Navigation/Global Positioning System (GPS) OSIP 16-93. Validation completed 30 March 1995 and Developmental Testing completed in July 1995. The Operational Testing (OT) completed January 1996 and production installs are ongoing.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits	100.0	0.7	46.0	0.4	38.0	0.4	37.0	0.5														11.0	0.2	232.0	2.2
Installation Kits N/R		0.6																							0.6
Installation Equipment																									
Receiver/Transmitter	4.0	0.2																						4.0	0.2
Control Radio Set	4.0	*																						4.0	*
Mount	4.0	*																						4.0	*
9" Tunable Antenna	4.0	0.1																						4.0	0.1
Converter	4.0	0.1																						4.0	0.1
Installation Equipment N/R																									
Engineering Change Orders																									
Data		0.1																							0.1
Training Equipment	5.0	*																						5.0	*
Support Equipment																									
ILS		0.1																							0.1
Other Support		0.5		*	0.1			*		*															0.6
Interim Contractor Support																									
Installation Cost	66.0	0.4	45.0	0.4	46.0	0.4	43.0	0.4	26.0	0.3												11.0	0.2	237.0	2.1
TOTAL PROCUREMENT		2.9		0.8		0.8		0.9		0.3													0.3		6.1

Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH-46E MODIFICATION TITLE: AN/ARC-210 Electronic Counter Countermeasures Radio (OSIP 9-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Concurrent with SDLM & FMT

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 7 Months

CONTRACT DATES: FY 1999: Dec-98 FY 2000: N/A

DELIVERY DATE: FY 1999: Jul-99 FY 2000: N/A

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (189) kits	66.0	0.4	45.0	0.4	46.0	0.4	32.0	0.3															189.0	1.5	
FY 1999 (37) kits							11.0	0.1	26.0	0.3													37.0	0.4	
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete (11) kits																						11.0	0.2	11.0	0.2
TOTAL	66.0	0.4	45.0	0.4	46.0	0.4	43.0	0.4	26.0	0.3												11.0	0.2	237.0	2.1

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	111	13	10	10	13	11	11	10	11	9	9	4	4												
Out	96	15	13	10	10	13	11	11	10	11	9	9	4	4											

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In									11	237
Out									11	237

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Night Vision Goggle Heads-Up Display (NVG HUD) (OSIP 19-92)

MODELS OF SYSTEMS AFFECTED: CH-46E TYPE MODIFICATION: Safety (HONA Category A)

DESCRIPTION/JUSTIFICATION:

This modification incorporates the use of Head-Up Displays (HUD) with Night Vision Goggles (NVG). Helicopter crews are increasingly performing missions at night utilizing NVGs. Although NVGs have provided pilots with the capability to see in low light conditions, they have also hampered their ability to read critical flight instruments. A NVG HUD system would allow the pilot to quickly ascertain flight data while maintaining an outside visual scan. Pilot workload would decrease because the NVG HUD system eliminates many of the inside/outside scan transitions otherwise required to access flight status information. The decreased pilot workload would make NVG flying considerably safer, particularly in environments requiring full pilot attention outside the cockpit (e.g., terrain flight and ship landings). Two systems will be installed in each cockpit (for pilot and co-pilot). This program was approved by ASN (RDA) by Program Management Proposal (PMP) 90-3 on 18 Jan 91. As of June 1998, there are 232 CH-46E aircraft (208 active + 24 reserve).

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

This equipment is being procured as a nondevelopmental item (NDI) in conjunction with the Army Night Vision Electronics Optical Program Office. The Army awarded a contract 30 Sep 91 which procures A and B kits (provisions and equipment) for both Army helicopters and participating Marine helicopters. Marine participation was requested and provided for Request for Proposal (RFP) development and source selection. Marine Corps pilots participated in Army flight evaluations of equipment submitted in response to the RFP, and the selected system meets their requirements. NADEP Cherry Point performed a validation of the NVG HUD system in Sep 93 and then AEL conducted EMC testing on the validation aircraft. Approval for Full Production was granted 13 Dec 93 and production installations are ongoing.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits	182	4.4	53	1.3																				235	5.7
Installation Kits N/R		1.3																							1.3
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders							*																		
Data		0.1				*																			0.1
Training Equipment	4	0.1	0.1					0.1																4	0.3
Support Equipment		0.2																							0.2
ILS			0.2		0.2		0.1		0.1																0.5
Other Support		0.8	0.1		0.1																				0.9
Interim Contractor Support		0.1																							0.1
Installation Cost	62	1.4	31	0.4	61	1.1	43	0.9	42	0.9														239	4.7
Total Procurement		8.2		2.1		1.3		1.1		1.0															13.7

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH-46E

MODIFICATION TITLE: Night Vision Goggle Heads-Up Display (NVG HUD) (OSIP 19-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Field Mod Team

ADMINISTRATIVE LEADTIME: N/A Months

PRODUCTION LEADTIME: N/A Months

CONTRACT DATES: FY 1998: N/A FY 1999: N/A FY 2000: N/A

DELIVERY DATE: FY 1998: N/A FY 1999: N/A FY 2000: N/A

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (239) kits	62	1.4	31	0.4	61	1.1	43	0.9	42	0.9														239	4.7
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	62	1.4	31	0.4	61	1.1	43	0.9	42	0.9													239	4.7	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	93	15	14	14	18	10	11	11	11	11	12	12	7												
Out	78	15	15	14	14	18	10	11	11	11	11	12	12	7											

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										239
Out										239

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Navigation/Global Positioning System (GPS) (OSIP 16-93)

MODELS OF SYSTEMS AFFECTED: CH-46E TYPE MODIFICATION: Safety & Congressional Mandate (HONA Category A)

DESCRIPTION/JUSTIFICATION:

The NAVSTAR GPS is designed to provide highly accurate passive position & velocity, and precise time to users worldwide in all weather conditions. The GPS will interface with existing navigation equipment. This OSIP contains only the H-46 aircraft provision kit and peculiar GFE. The GPS GFE is funded by a common avionics OSIP (71-88). This capability is a requirement to fly within U. S. airspace under a DoD/DoT Memorandum of Agreement. The GPS Operational Requirements Document (ORD) USAF 003-78 I/II/III was approved 22 Jan 90. The GPS installation in the H-46 aircraft was approved by ASN (RDA) by Program Management Proposal (PMP) 90-4 on 18 Jan 91. As of June 1998, there are 232 CH-46E aircraft (208 active + 24 reserve).

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

The NAVSTAR GPS program (GFE) completed Phase II (Full Scale Engineering Development) and completed Milestone IIIA (Approval for Limited Production) in Jun 86. Milestone IIIB completed in Jan 92. Research, Development, Test & Evaluation, Navy (RDT&E,N) is funded under program element 0604777N. H-46 unique A-kit and navigation equipment Low Rate Initial Production (LRIP) approval was granted 10 Dec 93, 19 Oct 94, and 24 Jul 95. Validation completed 30 Mar 95 and Developmental Testing completed in Jul 95. Operational Testing (OT) completed in Jan 96, and production installations are ongoing.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits	128	9.3	37	2.4	47	2.6	19	1.0															231	15.3	
Installation Kits N/R		2.7		0.8																				3.5	
Installation Equipment																									
HHSI	256	3.9	74	1.2	94	1.6	38	0.7															462	7.4	
ICU			12	0.2	66	1.3																	78	1.6	
HAC Panel		1.1																						1.1	
Installation Equipment N/R																									
Engineering Change Orders																									
Data		0.4		0.3		0.4																		1.1	
Training Equipment	6	2.2		0.2																			6	2.5	
Support Equipment		0.9		*																				0.9	
ILS		0.1		0.6		0.3		0.5		0.4														1.8	
Other Support		4.0		0.2		0.5		0.4		0.1														5.1	
Interim Contractor Support		1.3																						1.3	
Installation Cost	66	6.9	42	3.9	47	3.4	43	3.7	39	3.5													237	21.4	
Total Procurement		32.8		9.9		10.2		6.2		4.0														63.0	

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: **CH-46E**

MODIFICATION TITLE: Navigation/Global Positioning System (OSIP 16-93)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Concurrent with SDLM & FMT

ADMINISTRATIVE LEADTIME: 2 Months

PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 1998: Jan-98 FY 1999: Dec-98 FY 2000: N/A

DELIVERY DATE: FY 1998: Jul-98 FY 1999: Dec-99 FY 2000: N/A

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (218) kits	66	6.9	42	3.9	47	3.4	43	3.7	20	1.8														218	19.7
FY 1999 (19) kits									19	1.7														19	1.7
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	66	6.9	42	3.9	47	3.4	43	3.7	39	3.5													237	21.4	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	108	13	10	11	13	12	10	11	10	11	10	11	7												
Out	95	13	13	10	11	13	12	10	11	10	11	10	11	7											

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										237
Out										237

Exhibit P-3a Individual Modification

MODIFICATION TITLE: SAFETY IMPROVEMENT OSIP 25-97

MODELS OF SYSTEMS AFFECTED: H-46 TYPE MODIFICATION: Safety (HONA Category A)

DESCRIPTION/JUSTIFICATION: The Safety Improvement Program was directed by Chief of Naval Operations (CNO) letter 7100 serial N880F/7U660758 dated 10 Jan 97, and approved as an Abbreviated Acquisition Program (AAP) by the Program Executive Officer (PEO) on 24 Oct 97. As of June 1998, there are 312 H-46 aircraft (288 active + 24 reserve). This program contains five engineering change proposals (ECP):

1. HYDRAULIC SYSTEM UPGRADE: H-46 hydraulic system pump failures have caused three Class A mishaps in the past year. The pump is operating above rated pump specifications and suffers degrading reliability. The H-46D utility system pump supplies the #2 flight control system, and failure of the pump causes the loss of #2 flight controls and has caused one Class A flight mishap. The CH-46E pump has a history of overheating and igniting hydraulic fluid; and has caused two Class A flight mishaps. This program will engineer, qualify, and procure form/fit/function replacement pumps for both the H-46D and CH-46E configurations. Also, as part of this program, the unused Engine Exhaust Device System (EEDS), a subsystem of the utility hydraulic system, will be removed from the CH-46E. This modification is being installed in 310 H-46 aircraft (286 active + 24 reserve).
2. UPPER DUAL BOOST ACTUATOR (UDBA): The housing for the UDBA is highly susceptible to stress corrosion cracking. In addition, the threaded connections in the UDBA control valve assembly have experienced material wear. The material wear and housing cracks have caused one Class A mishap and one hazard report (HAZREP). If the control valve malfunctions, the pilot cannot control the drive direction of the helicopter, a potentially life threatening situation. As a result of these problems, two airframe bulletins have been issued and currently the actuator undergoes a recurring 200 hour inspection to prevent additional failures. This program will procure redesigned UDBA's that eliminate the failure mode in the control valve assembly. This modification is being installed in 221 CH-46E aircraft (197 active + 24 reserve).
3. NIGHT VISION GOGGLE (NVG) COMPATIBLE COCKPIT: Navy H-46D aircraft do not have integrated NVG lighted cockpit. Shipboard OPS require all aircraft to be NVG equipped, and this program will modify the H-46D cockpits with NVG lighting. This modification is being installed in 81 H-46D aircraft (all active, no reserves).
4. RUNNING ENGINE WASH: The poor T58-16/402 engine performance is due to dirt and oil residue in the compressor section. Maintenance requires daily wash after over-shipboard operations to remove salt encrustation. Improved nozzle design better atomizes cleaning fluid, allows engine wash to be performed with the engine running, and is environmentally friendly. This program will modify the configuration of 81 H-46D aircraft (all active, no reserves) and 687 T-58-16 engines (used in CH-46E aircraft) to allow running engine wash.
5. SLIDING RESCUE HATCH (HELL HOLE DOOR): Sixty-six H-46 aircraft are equipped with a hinged rescue hatch which cannot be secured in flight. With the door open, watertight integrity is lost and the aircraft will fill with water following a controlled landing into the water. The hinged rescue hatch has contributed to the loss of aircraft that might have recovered from controlled water landings, and also greatly shortens crew egress time from aircraft that have landed in the water. This upgrade will retrofit the 66 H-46 aircraft (all active, no reserves) with a sliding door configuration that can be secured in flight.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: 1. HYDRAULIC SYSTEM UPGRADE: The production order contract awarded in April 1998, and the hydraulic pumps are scheduled to start delivering in February 1999. The hydraulic pumps will be installed by the fleet. Removal of the unused EEDS plumbing by a Government-Owned, Contractor-Operated (GOCO) Field Mod Team (FMT) started in March 1998 and is scheduled to complete in September 1999.

2. UPPER DUAL BOOST ACTUATOR: The ECP, engineering design, testing, and verification is scheduled for FY99; anticipate initial kit procurement to begin FY2000 with kit deliveries and O-Level installations to begin in FY2001.

3. NVG COMPATIBLE COCKPIT: The ECP has been submitted and approved. Production kits were ordered in January 1998, and kit deliveries and installs by GOCO FMT are scheduled to begin second quarter FY99.

4. T58-16/402 RUNNING ENGINE WASH: The H-46D model ECP was approved in November 1997, and the CH-46E model ECP was approved in December 1997. Kit deliveries and O-Level installations to commence October 1999 for the CH-46E model, and in March 1999 for the H-46D model.

5. SLIDING RESCUE HATCH (HELL HOLE DOOR): Because the sliding door configuration was cut into the original H-46 production line, the data and drawings are available to incorporate this change. Production kits were ordered in May 1998, and kit deliveries and installs by GOCO FMT are scheduled to begin second quarter FY99.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Hydraulic Sys Upgrade (D-Model)			81	1.1																			81	1.1	
Hydraulic Sys Upgrade (E-Model)			89	1.3	140	2.1																	229	3.3	
Upper Dual Boost Actuator (E-Model)							36	0.7	88	1.9	97	2.1											221	4.7	
NVG Compatible Cockpit (D-Model)			56	2.2	25	1.0																	81	3.2	
T58-16/402 Running Engine Wash																									
D-Model AFC-477			81	0.2																			81	0.2	
E-Model PPC-165			687	0.8																			687	0.8	
Sliding Rescue Hatch (D/E Model)			32	0.4	34	0.4																	66	0.8	
Installation Kits N/R				0.9		0.9																		1.7	
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data				0.1		0.1					0.1													0.2	
Training Equipment			3	*							2	*											5	0.1	
Support Equipment				*																				*	
ILS				0.4				0.1			0.2		0.2											0.9	
Other Support						0.1		0.3		0.1		0.1		0.1										0.7	
Interim Contractor Support																									
Installation Cost					210	0.6	172	1.3															382	1.9	
Total Procurement				7.3		5.0		1.7		0.9		2.3		2.4										19.6	

Notes:
 1. Totals may not add due to rounding
 2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: H-46 MODIFICATION TITLE: Safety Improvement OSIP 25-97

INSTALLATION INFORMATION: **HYDRAULIC SYSTEM UPGRADE: PUMPS INSTALLED O-LEVEL, EEDS REMOVAL GOCO FMT; UPPER DUAL BOOST ACTUATOR: O-LEVEL; NVG COMPATIBLE COCKPIT: GOCO FMT; RUNNING ENGINE WASH: O-LEVEL; SLIDING RESCUE HATCH: GOCO FMT**

METHOD OF IMPLEMENTATION: _____

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 1998: Apr-98 FY 1999: N/A FY 2000: Dec-99

DELIVERY DATE: FY 1998: Dec-98 FY 1999: N/A FY 2000: Dec-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (382) kits					210	0.6	172	1.3																382	1.9
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL					210	0.6	172	1.3																382	1.9

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In		10	56	144	35	46	46	45																		
Out			10	56	144	35	46	46	45																	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										382
Out										382

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: AN/APR-39A(V)2 UPGRADE (OSIP 03-98)

MODELS OF SYSTEMS AFFECTED: CH-46E TYPE MODIFICATION: Combat Enhancement (HONA category C)

DESCRIPTION/JUSTIFICATION:

This change is being incorporated to provide vital protection and increase the survivability in hostile environments by providing warning and protection against radar guided missile threats. The change consists of the AN/APR-39A(V)2 radar warning receiver. The AN/APR-39A(V)2 is designed to provide an air defense warning system against radar and radar aided threats by providing central control and display functions consisting of five antennas, pilot control indicator, display unit receivers, and a processor. This OSIP procures only the H-46 peculiar items; the GFE is being procured by PMA-272 in a common OSIP (OSIP 14-90). This program was directed by Test & Evaluation Master Plan (TEMP) 962 Rev A. As of June 1998, there are 232 CH-46E aircraft (208 active + 24 reserve).

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

The Engineering Change Proposal (ECP) was delivered in August 1998. Validation is scheduled for March 1999 and testing in July 1999. The Maintenance Plan is scheduled to deliver in March 1999 and drawings and DCNs in September 1999. Production kits will be ordered in August 1999 with delivery and installation beginning in June 2000.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits					3	*	27	0.4			44	0.7	50	0.8	50	0.8	49	0.8						223	3.6
Installation Kits N/R							0.2	0.1																	0.3
Installation Equipment																									
Installation Equipment N/R								*			*														
Engineering Change Orders								*																	
Data								*			*														*
Training Equipment							5	*	0.3															5	0.3
Support Equipment								0.2					*		*		*		*		*				0.2
ILS							0.1	0.2																	0.2
Other Support							0.3	0.1	0.3	0.1		*		*		*		*		*					0.9
Interim Contractor Support																									
Installation Cost							3	*	11	0.1	21	0.3	44	0.6	50	0.7	50	0.8	49	0.7				228	3.3
Total Procurement							0.6	1.2		0.7	1.0	1.5	1.6	1.6	1.6	1.6	0.8							9.0	

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: **CH-46E**

MODIFICATION TITLE: AN/APR-39A(V)2 UPGRADE (OSIP 03-98)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: **Government Owned Contractor Operated (GOCO) FMT**

ADMINISTRATIVE LEADTIME: Varies Months PRODUCTION LEADTIME: 10 Months

CONTRACT DATES: FY 1998: Jul-98 FY 1999: Aug-99 FY 2000: N/A

DELIVERY DATE: FY 1998: Mar-99 FY 1999: Jun-00 FY 2000: N/A

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL					
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$				
FY 1998 & PY (3) kits							3	*																3	*			
FY 1999 (32) kits									11	0.1	21	0.3													32	0.4		
FY 2000 () kits																												
FY 2001 (44) kits													44	0.6												44	0.6	
FY 2002 (50) kits															50	0.7											50	0.7
FY 2003 (50) kits																	50	0.8									50	0.8
FY 2004 (49) kits																				49	0.7						49	0.7
FY 2005 () kits																												
To Complete () kits																												
TOTAL							3	*	11	0.1	21	0.3	44	0.6	50	0.7	50	0.8	49	0.7				228	3.3			

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In							1		2				11	7	8	6		11	11	11	11	12	13	12	13
Out								1		2				11	7	8	6		11	11	11	11	12	13	12

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	12	13	12	13	17	16	16			228
Out	13	12	13	12	13	17	16	16		228

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: Engine Control System (ECS) Retrofit (OSIP 07-00)

MODELS OF SYSTEMS AFFECTED: CH-46E TYPE MODIFICATION: Safety (HONA Category A)

DESCRIPTION/JUSTIFICATION: The current H-46 Engine Condition Control System (ECCS) has several failure modes which cause engines to shut down in flight; this presents a significant safety hazard to the fleet. Three bulletins have been issued by NAVAIR to inspect for system deficiencies. A formal system safety analysis utilizing historical failure data defines this as a Category One hazard and predicts six to seven failures per year. In the last three and a half years there have been 22 hazard reports (HAZARD) issued documenting this failure mode, and it is estimated that 20 more have occurred which have not been reported through the HAZREP system. The aircraft has a limited single engine operating envelope and is vulnerable to engine failure while flying and hovering over water. There have been five aircraft lost at sea in which pilots reported engine failure as the cause of the mishap. The aircraft were not recovered, and therefore, the specific engine failure mode could not be determined, but it is likely that ECCS caused some of the engine failures and ultimately led to the loss of aircraft. The proposed solution to this safety problem is to convert to an alternative ECS utilized by the commercial variant of the H-46. The proposed ECS will eliminate the safety failure modes, has a proven track record, needs only slight modification for military use, increases reliability, and will increase aircraft capability through increased engine responsiveness. Implementation will require configuration changes of the airframe and the engine. This is an urgent safety issue that must be resolved to eliminate future loss of crew and aircraft. As of June 1998, there are 312 H-46 aircraft (288 active + 24 reserve); however, forecast is 193 H-46 aircraft (169 active + 24 reserve) in FY04, the mid-point of installs.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: This is a non-developmental item (NDI). The Engineering Change Proposal (ECP) will be ordered in FY00.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Basic Kit									1	0.1	1	0.1	39	3.8	69	4.9	65	5.0	18	1.3			193	15.2	
Installation Kits N/R										1.5	2.4													3.9	
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Basic Kit ECO																						2.6		2.6	
Data													0.9	0.9		0.4								2.2	
Training Equipment													5	0.8										5	0.8
Support Equipment										*	0.7		0.7											1.5	
ILS										0.1	0.1		0.1		0.1		0.1		0.2					0.8	
Other Support											0.6		0.8		0.5		0.2		0.4		0.9			3.4	
Interim Contractor Support																									
Installation Cost											2	*			43	0.3	70	0.5	65	0.5	18	0.1	198	1.4	
Total Procurement										1.7	4.0		7.1		6.7		6.2		2.4		3.6		31.8		

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH-46E

MODIFICATION TITLE: Engine Control System Retrofit

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Government Owned Contractor Operated (GOCO) Field Mod Team

ADMINISTRATIVE LEADTIME: 2 Months

PRODUCTION LEADTIME: Varies Months

CONTRACT DATES: FY 1998: N/A

FY 1999: N/A

FY 2000: Dec-99

DELIVERY DATE: FY 1998: N/A

FY 1999: N/A

FY 2000: Dec-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 () kits																									
FY 2000 (1) kits											1	*												1	*
FY 2001 (1) kits											1	*												1	*
FY 2002 (44) kits															43	0.3	1	*						44	0.3
FY 2003 (69) kits																	69	0.5						69	0.5
FY 2004 (65) kits																			65	0.5				65	0.5
FY 2005 (18) kits																					18	0.1		18	0.1
To Complete () kits																									
TOTAL											2	*			43	0.3	70	0.5	65	0.5	18	0.1	198	1.4	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003						
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
In														1		1									11	11	11	10
Out															1		1									11	11	11

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	17	17	17	19	17	16	16	16	18	198
Out	10	17	17	17	19	17	16	16	34	198

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: Electrical System Upgrade (OSIP 08-00)

MODELS OF SYSTEMS AFFECTED: CH-46E TYPE MODIFICATION: Safety (HONA Category A)

DESCRIPTION/JUSTIFICATION: The power generation system has been the cause of ten hazard reports (HAZREP) over the past three years. The causal factor has been traced back to the generators and the voltage control system. Two incidents resulted in dual generator failure, and seven incidents resulted in aircraft smoking/fires. (One of those fires was caused by flammable fluid ingestion into the generator that turned a hydraulic leak into a massive fire that consumed the entire aircraft in a Class A mishap.) A formal system safety analysis utilizing historical failure data defines this hazard as a potential Category One hazard and predicts two to three failures per year. This is an urgent safety problem that must be alleviated to eliminate loss of life and aircraft. The proposed solution is to modify the power generation system to eliminate the safety problem, provide cleaner power to sensitive avionics components, and improve performance of the generator to meet the power demand for future electrical installation in the aircraft. As of June 1998, there are 312 H-46 aircraft (288 active + 24 reserve); however, forecast is 193 H-46 aircraft (169 + 24 reserve) in FY04, the mid-point of installs.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The Engineering Change Proposal (ECP) will be ordered in FY00.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Basic Kit									2	0.1			35	1.9	44	2.4	58	3.2	54	3.1			193	10.6	
Installation Kits N/R										1.5		2.0												3.5	
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Basic Kit ECO																						2.6		2.6	
Data													0.8		0.8		0.4							2.1	
Training Equipment												2	0.1										2	0.1	
Support Equipment										*	*		0.1		0.1		0.1							0.2	
ILS										*	0.1		0.1		0.1									0.3	
Other Support											0.5		0.6		0.3		0.3			0.6		0.9		3.2	
Interim Contractor Support																									
Installation Cost											2	*			37	0.2	44	0.3	58	0.4	54	0.4	195	1.3	
Total Procurement										1.6		2.6		3.5		3.9		4.3		4.0		3.9		23.8	

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH-46E

MODIFICATION TITLE: Electrical System Upgrade

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Government Owned Contractor Operated (GOCO) Field Mod Team

ADMINISTRATIVE LEADTIME: 2 Months

PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 1998: N/A

FY 1999: N/A

FY 2000: Dec-99

DELIVERY DATE: FY 1998: N/A

FY 1999: N/A

FY 2000: Dec-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1998 & PY () kits																										
FY 1999 () kits																										
FY 2000 (2) kits											2	*												2	*	
FY 2001 () kits																										
FY 2002 (37) kits															37	0.2									37	0.2
FY 2003 (44) kits																	44	0.3							44	0.3
FY 2004 (58) kits																			58	0.4					58	0.4
FY 2005 (54) kits																					54	0.4			54	0.4
To Complete () kits																										
TOTAL											2	*			37	0.2	44	0.3	58	0.4	54	0.4	195	1.3		

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003						
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
In														1		1									10	9	9	9
Out															1		1									10	9	9

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	10	12	11	11	14	14	15	15	54	195
Out	9	10	12	11	11	14	14	15	69	195

Exhibit P-40, BUDGET ITEM JUSTIFICATION

DATE: **February 1999**

APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications								P-1 ITEM NOMENCLATURE AH-1W Series Modifications					
Program Element for Code B Items:								Other Related Program Elements					
	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
QTY		A											
COST (In Millions)		A	23.0	35.4	27.8	13.7	9.9	11.5	8.8	4.5	2.2		136.8

This line item funds modifications to the AH-1W aircraft. Modifications prior to FY 1997 were funded in the H-1 Series line item. There are 201 AH-1W's. The AH-1W is a tandem seat, two place (pilot and gunner/co-pilot) attack helicopter designed and built to provide the high speed and maneuverability required by the attack mission. The armament of the AH-1W includes the SIDEWINDER, TOW and the HELLFIRE missile systems, a chin-mounted 20mm turret gun, and wide variety of forward firing and gravity released external stores. Operational Requirements Document (ORD) AAS-35 covers all OSIPs listed below. The overall goal of the modifications budgeted in FY 2000 is to continue to fulfill the operational requirement to detect, identify and destroy tactical sized armored targets with precision guided munitions during the day, at night, and during adverse weather, as well as providing enhanced conventional weapons delivery by utilizing the systems laser ranging system. The specific modifications budgeted and programmed are:

(TOA, \$ in Millions)

OSIP No.	Description	FY1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
8-90	AH-1 Night Targeting System	19.8	25.0	14.8	2.0							61.6
3-93	AH-1 Embedded GPS/ARC-210 NAV Upgrade	2.8	8.4	11.8	7.8	5.9	2.4					39.1
25-94	AH-1 Helicopter Night Vision Goggle (NVG) Compatible Exterior Lighting	0.4	1.0									1.4
16-98	AH-1W APR-39A(V)2		1.1	1.2	1.1	0.4						3.8
12-00	H-1 Mission Planning Module and OFP Software Upgrade Program				1.2	0.9	1.2	1.0	1.0	1.0		6.3
13-00	AH-1W Aircraft and T700 Engine Safety Corrections				1.6	2.7	7.8	7.8	3.5	1.1		24.6
Total		23.0	35.4	27.8	13.7	9.9	11.5	8.8	4.5	2.2		136.8

RESERVE FUNDING INCLUDED IN THE TOTALS:

0.5

Notes: Totals may not add due to rounding.

Prior to FY 1997 AH-1W OSIPs were budgeted in the H-1 Series P-1 Line Item.

Exhibit P-3a Individual Modification

MODIFICATION TITLE: AH-1 Night Targeting System (OSIP 8-90)

MODELS OF SYSTEMS AFFECTED: AH-1W TYPE MODIFICATION: Safety

DESCRIPTION/JUSTIFICATION: The U.S. Marine Corps (USMC) has an operational requirement to detect, identify and destroy tactical sized armored targets with precision guided munitions during day, night and adverse weather conditions. The AH-1W can deliver TOW missiles during day operations and HELLFIRE missiles. The Night Targeting System (NTS) provides a night/adverse weather TOW and autonomous HELLFIRE capability. In addition, NTS will provide enhanced conventional weapons delivery by utilizing the systems laser ranging system. This modification has two key parts: (1) the modification of the cockpit and the canopy places a radar altimeter in the front cockpit for the first time; and (2) the NTS itself. The Night Vision Goggle Helmet mounted Display and Improved Crew Restraint System completes the NTS modification. NTS will accomplish the USMC requirement for night operations by incorporating a high resolution stabilized forward looking infra-red sensor, charged coupled device camera system, automatic target tracking, and laser finder/designator into the current M65 telescopic sight unit. Due to changes in the TOW missile control by addition of the NTS, a Buffer Box is being incorporated to ensure proper operation of the TOW missile with the NTS.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: This was a joint effort with the Israeli Air Force and was developed under research, development, test and evaluation (RDT&E) program element 604213N, project W1378 which began in FY 1987. A Memorandum of Understanding was signed with the Government of Israel in August 1987, and implemented the acquisition strategy. Authorization to commence cockpit/canopy modifications (CCMOD) to the aircraft was granted ahead of FRP for the NTS because of the safety advantage of getting the radar altimeter in the front cockpit. NTS installations are accomplished by squadron personnel upon kit delivery. A milestone IIA decision (approval for limited production) was approved in July 1992. Approval for full production was granted February 1994. This modification will cover 128 AH-1W aircraft and five AH-1W trainers.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
NTS Kit ECP # 1648	91	99.2	12	8.9	15	10.9	5	5.4															123	124.4	
A/F Kit ECP # 1648	96	29.1	10	3.0	17	4.3	5	1.4															128	37.9	
Installation Kit - Unit Price																									
Installation Kits N/R		19.2				0.4																		19.5	
Installation Equipment																									
GFE Retrofit		3.0		0.6		0.8		0.6																5.0	
NTS GFE	52	0.8	12	0.3	15	0.3																	79	1.4	
IBAHRS GFE	41	1.4																					41	1.4	
VCRs	96	2.6	12	0.4	15	0.3																	123	3.4	
Installation Equipment N/R		2.0																						2.0	
Engineering Change Orders		6.3				4.2																		10.5	
Data		0.5																						0.5	
Training Equipment	4	3.4	1	1.4		0.9		0.8															5	6.5	
Support Equipment		14.8																						14.8	
ILS		14.1																						14.1	
Other Support		18.7		0.4		1.6		0.9		*														21.6	
Interim Contractor Support																									
Installation Cost	95	31.4	11	4.9		1.3	17	5.7	5	1.9													128	45.2	
Total Procurement		246.6		19.8		25.0		14.8		2.0														308.2	

Notes:
 1. Totals may not add due to rounding
 2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: AH-1W MODIFICATION TITLE: AH-1 NIGHT TARGETING SYSTEM (OSIP 8-90)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Drive-In Modification (Turn Key) through FY97. Annualized FY98 and out.

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 1998: Jan-98 FY 1999: Nov-98 FY 2000:

DELIVERY DATE: FY 1998: Jan-99 FY 1999: Nov-99 FY 2000:

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (123) kits	95	31.4	11	4.9			17	5.7																123	42.0
FY 1999 (5) kits									5	1.9														5	1.9
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	95	31.4	11	4.9			17	5.7	5	1.9													128	44.0	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	95	1	4	3	3	6	6	5	2	3															
Out	89	6	1	4	3	3	6	5	2	3															

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										128
Out										128

Exhibit P-3a		Individual Modification																							
MODIFICATION TITLE:		<u>AH-1 Embedded GPS/ARC-210 Navigation Upgrade Program (OSIP 3-93)</u>																							
MODELS OF SYSTEMS AFFECTED:		<u>AH-1W</u>										TYPE MODIFICATION: <u>Upgrade</u>													
DESCRIPTION/JUSTIFICATION: The Department of Defense has mandated that all U.S. military incorporate Global Positioning System (GPS) as their primary navigation equipment. GPS will provide precise location information anywhere on the globe. Incorporation of this navigation system will allow the AH-1W weapon system to remove equipment that is approaching obsolescence while improving the operational capability and reducing the overall weight of the aircraft. The ARN-118 TACAN, and ARN-89 Automatic Direction Finder, ASN-75 Gyrocompass and APN-217 Doppler Radar Set will be replaced with an Embedded GPS INS (EGI) and ARN-153(V)4 TACAN. The navigation system solution will be displayed on a modified AN/ASQ-205 Cockpit Control System.																									
The AN/ARC-210 is combination UHF/VHF, AM/FM jam-resistant radio that was developed to allow for Electronic Protection(EP) interoperability with the Air Force, Army and NATO. It will be installed with this modification. The radio provides a dual UHF capability for CV based TACAIR; VHF-FM for close air support and maritime channels; VHF-AM for air traffic control; and EP capabilities using the Air Force waveform (UHF-FM HAVEQUICK I AND II), and the Army developed waveform (UHF-FM SINGGARS). The EP parameters and single channel preset information can be loaded via CYZ-10 Data Transfer Device (DTD). The ARC-210 system needs accurate time signatures to perform the frequency hopping functions. These time signatures will be provided from the EGI systems. The Cobra 1.0 series of software operational flight program facilitates use of mission planning software which capitalizes on the improved communications capability and more accurate navigation provided by GPS.																									
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The EGI is a non-developmental item (NDI) being procured through the Air Force as DOD C3I. The Air Force approved a Milestone III Full Rate Production Decision March 1994. The first AN/ARC-210 Integration units were procured in FY 1993. AN/ARC-210 Milestone III Full Rate Production was approved April 1994. This modification will cover 181 AH-1W aircraft and two AH-1W trainers. FY 98 and FY 99 Other Support funds H-1 MPM compatibility /conversion.																									
FINANCIAL PLAN: (TOA, \$ in Millions)																									
	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RD&E																									
PROCUREMENT																									
Installation Kits ECP # 1686	50	5.4	24	1.6	30	2.1	40	2.9	18	1.2	19	1.4											181	14.6	
Installation Kits N/R		3.1																						3.1	
Installation Equipment																									
GFE Retrofit								*	0.1		0.1		0.1											0.2	
CDNU GFE	96	1.3	48	0.6	60	0.7	80	1.0	36	0.5	38	0.5												358	4.6
ARC-210 GFE	4	0.3																						4	0.3
Installation Equipment N/R																									
Engineering Change Orders																									
Data		0.1						1.0																1.1	
Training Equipment	2	0.3																						2	0.3
Support Equipment		0.1																							0.1
ILS		1.0																							1.0
Other Support		3.9		0.6		1.9		2.4		0.9		0.6													10.3
Interim Contractor Support																									
Installation Cost	52	6.0			24	3.7	30	4.4	26	5.2	32	3.4	19	2.4										183	25.1
Total Procurement		21.6		2.8		8.4		11.8		7.8		5.9		2.4											60.8

Notes:
 1. Totals may not add due to rounding
 2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: AH-1W MODIFICATION TITLE: AH-1 Embedded GPS/ARC-210 Navigation Upgrade Program (OSIP 3-93)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Drive-in Modification (turn-key) for kit procurements through FY 1996. FY 1997 through FY 2000 contractor drive-in modification; and FY 2001 & out contractor field modification team.

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 1998: Feb-98 FY 1999: Dec-98 FY 2000: Dec-99

DELIVERY DATE: FY 1998: Jan-99 FY 1999: Dec-99 FY 2000: Dec-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (106) kits	52	6.0			24	3.7	30	4.4																106	14.1
FY 1999 (40) kits									26	5.2	14	1.8												40	7.0
FY 2000 (18) kits											18	1.6												18	1.6
FY 2001 (19) kits													19	2.4										19	2.4
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	52	6.0			24	3.7	30	4.4	26	5.2	32	3.4	19	2.4										183	25.1

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	44	8	8	8	8		10	10	10		8	9	9	14	6	6	6	6	1	6	6	6				
Out	36	8	8	8	8	8		10	10	10		5	10	11	14	6	6	6	6	1	6	6	6	6		

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										183
Out										183

Exhibit P-3a		Individual Modification																						
MODIFICATION TITLE:		AH-1 Helicopter Night Vision Goggle (NVG) Compatible Exterior Lighting (OSIP 25-94)																						
MODELS OF SYSTEMS AFFECTED:		AH-1W										TYPE MODIFICATION: Safety												
DESCRIPTION/JUSTIFICATION: Marine Corps helicopters are equipped with night vision compatible internal cockpit lighting. External lights compatible with night vision goggles increase pilot safety and mission effectiveness during nighttime operations.																								
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: This program utilizes off the shelf hardware to improve night vision compatibility exterior lighting on Marine helicopters. IR beacon ring lights and IR strip lights will be installed. This modification will install IR beacon rings in 182 AH-1W aircraft and two AH-1W trainers. This modification will install IR strip lights in 199 AH-1W aircraft and two AH-1W trainers.																								
FINANCIAL PLAN: (TOA, \$ in Millions)																								
	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E																								
PROCUREMENT																								
Installation Kits																								
A Kit IR Beacon Light *	182	1.2																					182	1.2
A Kit IR Strip Light **	199	2.1																					199	2.1
Installation Kit-Unit Price																								
Installation Kits N/R	4	*																					4	*
Installation Equipment																								
Installation Equipment N/R																								
Engineering Change Orders																								
Data																								
Training Equipment	4	*																					4	*
Support Equipment																								
ILS				0.1																				0.1
Other Support		0.4		0.3																				0.7
Interim Contractor Support																								
Installation Cost	253	1.5			132	1.0																	385	2.4
Total Procurement		5.2		0.4		1.0																		6.6
Notes:																								
1. Totals may not add due to rounding		* A Kit IR Beacon Light ECP # CHPT H-1-CP1-94R1																						
2. Asterisk indicates amount less than \$50K		** A Kit IR Strip Light ECP # CHPT H-1-CP7-95																						

Exhibit P-3a
 MODELS OF SYSTEMS AFFECTED: AH-1W MODIFICATION TITLE: AH-1 Helicopter Night Vision Goggle (NVG) Compatible Exterior Lighting (OSIP 25-94)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Teams

ADMINISTRATIVE LEADTIME: N/A Months PRODUCTION LEADTIME: Months

CONTRACT DATES: FY 1998: N/A FY 1999: N/A FY 2000: N/A

DELIVERY DATE: FY 1998: N/A FY 1999: N/A FY 2000: N/A

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (385) kits	253	1.5			132	1.0																		385	2.4
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	253	1.5			132	1.0																		385	2.4

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	250		69	33	33																					
Out	115	79	56	69	33	33																				

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										385
Out										385

Exhibit P-3a	Individual Modification																								
MODIFICATION TITLE: <u>AH-1W APR-39A(V)2 (OSIP 16-98)</u>																									
MODELS OF SYSTEMS AFFECTED: <u>AH-1W</u>	TYPE MODIFICATION: <u>Survivability</u>																								
DESCRIPTION/JUSTIFICATION: Existing AH-1W aircraft self-protection/survivability systems are inadequate to cope with present-day threats. This engineering change incorporates a survivability system that reduces aircrew workload, centralizes control functions and increases the helicopter's survivability during operations in or near hostile territory by providing additional threat detection capabilities; and enhanced missile and laser detection systems. The EW System consists of: a. Installation of the AN/AAR-47 Missile Warning Set b. Modification to the existing wiring for installation of the APR-39(V)2 RWR c. Removal of the AN/APR-44(3) Radar Warning System (MWS), and required interfaces d. Installation of the AN/AVR-2 Laser Detecting Set (LDS)																									
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: This program utilizes operationally approved hardware to increase aircraft self protection and survivability. This modification will cover 77 AH-1W aircraft and two AH-1W trainers.																									
FINANCIAL PLAN: (TOA, \$ in Millions)																									
	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits *					4	*	54	0.4	19	0.1														77	0.5
Installation Kit - Unit Price																									
Installation Kits N/R						0.2		*																	0.2
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data						0.4		*																	0.4
Training Equipment					2	0.2																		2	0.2
Support Equipment						0.1																			0.1
ILS																									
Other Support						0.2		0.3		0.1		0.1													0.7
Interim Contractor Support																									
Installation Cost					6	0.1	14	0.4	44	0.9	15	0.3												79	1.7
Total Procurement						1.1		1.2		1.1		0.4													3.8
Notes:																									
1. Totals may not add due to rounding * Installation Kits ECP # H1-CP#-95R2																									
2. Asterisk indicates amount less than \$50K																									

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: AH-1W MODIFICATION TITLE: AH-1W APR-39A(V)2 (OSIP 16-98)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Teams

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 4 Months

CONTRACT DATES: FY 1998: Nov-97 FY 1999: Dec-98 FY 2000: Dec-99

DELIVERY DATE: FY 1998: Mar-98 FY 1999: Apr-99 FY 2000: Apr-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (6) kits					6	0.1																		6	0.1
FY 1999 (54) kits							14	0.3	40	0.9														54	1.1
FY 2000 (19) kits									4	0.1	15	0.3												19	0.4
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL					6	0.1	14	0.3	44	0.9	15	0.3											79	1.7	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In				3	3			7	7	11	11	11	11	11	4										
Out				3	3			7	7	11	11	11	11	11	4										

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										79
Out										79

Exhibit P-3a		Individual Modification																								
MODIFICATION TITLE:		<u>H-1 Mission Planning Module (MPM) and OFP Software Upgrade Program (OSIP 12-00)</u>																								
MODELS OF SYSTEMS AFFECTED:		<u>AH-1W</u>									TYPE MODIFICATION: <u>Upgrade</u>															
<p>DESCRIPTION/JUSTIFICATION: The H-1 MPM is a unique software module application designed to operate in and interface with the Joint Mission Planning System (JMPS) Core software architecture. The MPM links the JMPS core to the aircraft operational flight program (OFP) software. This OSIP will also provide for periodic OFP software upgrades. It is tailored to meet the mission planning requirements of the H-1 weapon system platform and makes extensive use of generic Core processing with adjustments for unique H-1 requirements. The MPM will provide the capability for the H-1 operator to effectively and efficiently plan a mission in an automated environment, thereby reducing aircrew workload. The MPM will allow for the development and refinement of specific mission data to be produced in the JMPS and then transferred to the aircraft via a Mission Data Loader/Advanced Memory Unit device. This data will include target and waypoint, threats, GPS, ARC-210, EW System, weapons, and aircraft performance information. The MPM will also allow for helicopter performance calculations, taking into consideration terrain and threat information, which will enhance survivability. As a result, the H-1 MPM and OFP software upgrades will enable the operators to more effectively plan the assigned H-1 missions and coordinate with other Service and other Marine assets.</p> <p>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Modification of the existing MPM is necessary to reflect the new Windows NT architecture design. FY 98 and FY 99 H-1 prior year TAMPS (predecessor to JMPS) developments were funded under OSIP 3-93. JMPS 7.0 Core and MPM releases are scheduled as follows: Release #1: FY01; Release #2: FY02; Release #3: FY03; Release #4: FY05</p> <p>FINANCIAL PLAN: (TOA, \$ in Millions)</p>																										
		Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
		Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																										
PROCUREMENT																										
Installation Kits																										
Installation Kits N/R																										
Installation Equipment																										
Installation Equipment N/R									1.0		0.7		1.1		0.8		0.9		0.8							5.3
Engineering Change Orders																										
Data											*		*		*				*							0.1
Training Equipment											*		*		*				*							0.1
Support Equipment																										
ILS																										
Other Support									0.1		0.1		0.1		0.1		0.1		0.1		0.1					0.9
Interim Contractor Support																										
Installation Cost																										
Total Procurement									1.2		0.9		1.2		1.0		1.0		1.0		1.0				6.3	
Notes:																										
1. Totals may not add due to rounding																										
2. Asterisk indicates amount less than \$50K																										

Exhibit P-3a		Individual Modification																							
MODIFICATION TITLE:		AH-1W AIRCRAFT AND T700 ENGINE SAFETY CORRECTIONS (OSIP13-00)																							
MODELS OF SYSTEMS AFFECTED:		AH-1W										TYPE MODIFICATION: Safety													
<p>DESCRIPTION/JUSTIFICATION: The AH-1W helicopter is powered by two General Electric T700-GE-401 turboshaft engines which are controlled throughout the normal operating range by the Electrical Engine Control Unit (EECU) and the Hydro-Mechanical Unit (HMU). Since 1994, 86 total power loss incidents have occurred with the T700-GE-401; 58 ground flameouts, 7 ground roll-backs, 10 inflight shut-downs, and 11 inflight rollbacks. These inadvertent power loss incidents severely jeopardize aircrew safety. Incorporation of a Digital Electronic Control Unit (DECU) with auto-ignition system will reduce the risk of an uncommanded engine flameout and complete power loss. This change will replace the EECU with a DECU which will be carried forward into the AH-1Z. Additionally, a Dynamic Component Change (DCC) to incorporate new chip detectors on the 42 and 90 degree gear boxes are required to provide improved warning of impending failure, and new filler caps to prevent internal corrosion caused by water intrusion. The equipments introduced by this change will be carried forward into the AH-1Z.</p> <p>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The DECU is a General Electric proprietary, non-developmental item used on the SH-60B and aircraft equipped with T700-GE-401C. Contract award is scheduled for the 1st quarter of FY00. Installation of prototypes will be accomplished in 2nd quarter of FY01 to complete verification. Organizational level installations will commence in the 2nd quarter of FY02. This modification will cover 191 AH-1W aircraft and two AH-1W trainers.</p>																									
FINANCIAL PLAN: (TOA, \$ in Millions)																									
	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
AFC XXX DECU Install Kits *											4	*	84	0.1	86	0.1	17	*						191	0.2
DCC XXX 42 & 90 Degree Gearbox *															50	1.0	82	1.6	59	1.1				191	3.7
Installation Kits N/R									5	0.1		0.1	2	0.2										7	0.5
Installation Equipment									10	0.3	8	0.3	168	5.7	172	6.1	34	1.2						392	13.6
Installation Equipment N/R										1.0															1.0
Engineering Change Orders												*	0.1		0.1		*								0.3
Data											0.3	0.1			*										0.5
Training Equipment											0.4	8	0.5											8	0.9
Support Equipment											0.4														0.4
ILS											0.2	0.1			0.1		0.2								0.6
Other Support									0.2		1.0	0.6			0.4		0.5								2.6
Interim Contractor Support												0.3													0.3
Installation Cost																									
Total Procurement										1.6		2.7		7.8		7.8		3.5		1.1					24.6
Notes:																									
1. Totals may not add due to rounding * ECP # TBD																									
2. Asterisk indicates amount less than \$50K																									
3. Kits will be installed at the organizational level																									

Exhibit P-40, BUDGET ITEM JUSTIFICATION										DATE: February 1999			
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications								P-1 ITEM NOMENCLATURE H-53 Modifications					
Program Element for Code B Items:								Other Related Program Elements					
	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
QTY		A											
COST (In Millions)	186.4	A	57.3	34.7	37.4	45.2	30.0	20.5	38.2	66.8	85.1	1,027.7	1,629.4
<p>This line item funds modifications to the CH-53D/CH-53E/MH-53E aircraft. There are 44 MH-53E Helicopters; 166 CH-53E Helicopters; and 47 CH-53D Helicopters. The CH-53E is a seven blade main rotor and a four-blade canted tail rotor helicopter powered by three T64-GE-416A turbo shaft engines on the CH-53E while the CH-53D has six main rotor blades and two T64-GE-413 engines. The CH-53D/E aircraft are capable of both land and ship based transport of heavy equipment, supplies, and personnel. The MH-53E is similar to the CH-53E with additional capabilities for Airborne Mine Countermeasures (AMCM), Vertical On-Board Delivery (VOD), and Special Missions which require longer range and more precise navigation than that of the CH-53E. The overall goal of the modifications budgeted in FY00 is increased communication and navigation, night vision capability, and fleet operation and safety performance in the H-53 community.</p> <p>The specific modifications budgeted and programmed are:</p>													
(TOA, \$ in Millions)													
OSIP No.	Description	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
67-82	NIGHT VISION GOGGLES		1.9		0.2								2.1
23-91	MH53E ENGINE ENHANCEMENT	36.9	2.8	1.5	2.1	1.4							44.8
11-92	AN/ARC-210 ECCM RADIO	7.6	2.7	3.4	3.7	2.0	2.6	0.3	0.3	0.5	0.5		23.6
12-92	CH-53E HELICOPTER NIGHT VISION SYSTEM	81.9	13.7	0.5	3.0								99.1
20-92	MH GLOBAL POSITIONING SYSTEM (GPS)	25.5	3.8	2.9	2.6	3.1	2.1	1.6	1.2	0.8			43.7
24-93	H-53 GLOBAL POSITIONING SYSTEM (GPS)	12.2	8.1	5.6	2.2	0.9							29.0
20-94	INCORP OF #2 ENGINE FIRE DETECTORS	1.3	1.2	1.4	1.0	0.7	0.4						5.9
21-94	(ANVIS/HUD) AN/AVS-7	6.0	2.6	1.7	2.5	4.4	3.3	3.4	1.7	2.7	0.7		28.9
22-94	CRASHWORTHY PILOT & CO-PILOT SEATS	7.3	0.4		*								7.8
26-94	(NVG) COMPATIBLE EXTERIOR LIGHTING	2.9	1.1	1.0	0.8	0.1							5.9
35-94	TRDS SHAFT DISCONNECT COUPLING MONITOR	4.6	10.6	7.7	1.4	0.1							24.4
20-97	ATTENUATING TROOP SEATS		8.4	1.0	6.4	5.1	5.0	4.6	5.5	4.1	0.9		41.0
6-98	AN/APR-39A (V) 2 UPGRADE			0.3	1.4	1.3	1.4	1.1	0.5	0.8	0.5	5.6	12.9
7-98	INTEGRATED MECHANICAL DIAGNOSTIC SYSTEM			7.6	9.5	7.5	4.7	4.4	8.3	11.3	14.1	91.0	158.4
8-98	TACTICAL MISSION PLANNING SYSTEM (TAMPS)			0.4	0.6	0.2	0.2						1.2
14-00	SLEP					18.3	8.2	3.7	20.7	46.6	68.5	931.1	1,097.1
XX-01	IMPROVED EXTERNAL LIFTING DEVICE (IELD)						2.2	1.4					3.6
		186.4	57.3	34.7	37.4	45.2	30.0	20.5	38.2	66.8	85.1	1,027.7	1,629.4
TOTAL RESERVE FUNDING INCLUDED IN TOTAL		1.2	1.8	0.3	2.3	0.2	1.2		6.6	6.8	6.9		
<p>Note: Totals may not add due to rounding. Note: * indicates amounts less than 51K</p>													

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: NIGHT VISION GOGGLES (NVG) (OSIP 67-82)

MODELS OF SYSTEMS AFFECTED: CH-53E (13) TYPE MODIFICATION: SAFETY, MISSION/PERFORMANCE ENHANCEMENT

DESCRIPTION/JUSTIFICATION: The present and projected threat requires low altitude helicopter operations which cannot now be conducted at night due to a lack of adequate night vision equipment. The third generation aviation NVG, with appropriate cockpit lighting modifications for compatibility, will provide increased capability for the flight crew to perform nap-of-earth and contour flying at night time in conditions of reduced illumination down to overcast starlight.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The NVG were developed by the US Army and are referred to as Aviator's Night Vision Imaging System (ANVIS) or AVS-6. Army production was authorized in September 1982. US Navy approval for full production (AFP) was received in October 1986. Operational use of the AVS-6 requires modification of existing cockpit lighting to NVG compatible lighting. A quick fix lighting modification for the AVS-6 was developed by the Naval Air Test Center and kits were manufactured by the Naval Avionics Center (NAC) for the H-53 series aircraft.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
CH-53E (PNCLA-37R1)			13	1.0																				13	1.0
Installation Kits N/R																									
Installation Equipment																									
CH-53E (PNCLA-37R1)				0.9																					0.9
Installation Equipment N/R																									
Engineering Change Orders																									
Data																									
Training Equipment																									
Support Equipment																									
ILS																									
Other Support																									
Interim Contractor Support																									
Installation Cost							13	0.2																13	0.2
Total Procurement				1.9				0.2																	2.1

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH-53E (13) MODIFICATION TITLE: NIGHT VISION GOGGLES (NVG) (OSIP 67-82)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Modification Teams and SDLMs

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 4 Months

CONTRACT DATES: FY 1998: _____ FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 1998 & PY (13) kits							13	0.2															13	0.2
FY 1999 () kits																								
FY 2000 () kits																								
FY 2001 () kits																								
FY 2002 () kits																								
FY 2003 () kits																								
FY 2004 () kits																								
FY 2005 () kits																								
To Complete () kits																								
TOTAL							13	0.2															13	0.2

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In						3	3	3	4																
Out						3	3	3	4																

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										13
Out										13

Exhibit P-3a Individual Modification

MODIFICATION TITLE: MH-53E ENGINE UPGRADE T64-GE-419 (OSIP 23-91)

MODELS OF SYSTEMS AFFECTED: CH-53E (1), MH-53E (44 - 32 Active, 12 Reserve), 45 Total TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: THE T64-GE-419 ENGINE WILL PRODUCE 5,000 SHAFT HORSEPOWER AT SEA LEVEL, WHICH WILL CORRECT AN OPEVAL DEFICIENCY CONCERNING MH-53E ONE ENGINE INOPERATIVE PERFORMANCE DURING MINE COUNTERMEASURE OPERATIONS. APPLICABLE ECP: 2626R1

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The engine modification will be accomplished in two phases: the first phase forward fitted more durable, internal components (blades, shrouds, etc.) into 416 production engines beginning in FY99. These internally modified 416 engines are designed 416A. The components offer immediate rewards of longer engine life and reduced probability of engine failure. Early incorporation has saved a total of \$7M in down-stream retrofit costs. In addition, the components serve as the core of the longer range effort to upgrade power to 5,000 horsepower. Qualification was completed in FY90. The second phase will backfit the applicable upgraded external engine components (fuel controls and pump) plus associated airframe changes (engine/engine-bay cooling and torque/fire warning mods.) FY91 procured VAL/VER for MH-53E. FY93 procured VAL/VER for CH-53E. The upgraded engine is designated the T64-GE-419.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Aircraft Kit -MH (32 Act, 12 Res)	37	6.3	7	1.0																			44	7.3	
Aircraft Kit - CH	1	0.2																					1	0.2	
Engine Oil Cooler Mod MH	84	2.6	6	0.9																			90	3.5	
Installation Kits N/R		19.5																						19.5	
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data		2.2		*																				2.2	
Training Equipment	5	0.5		*		0.2		0.2		0.1													5	1.0	
Support Equipment		0.8																						0.8	
ILS		0.4		0.1																				0.6	
Other Support		3.8		0.2		0.3		0.1																4.3	
Interim Contractor Support																									
Installation Cost	3	0.6	8	0.5	4	1.0	23	1.8	12	1.3													50	5.3	
Total Procurement		36.9		2.8		1.5		2.1		1.4														44.8	

Notes: Install cost includes cost for installation of Aircraft kits, engine installs, and 5 trainers

1. Totals may not add due to rounding

2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH-53E (1), MH-53E (44 - 32 Active, 12 Reserve), 45 Total MODIFICATION TITLE: MH-53E ENGINE UPGRADE T54-GE-419 (OSIP 23-91)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Naval Aviation Depot (NADEP) will modify the engines. Airframe modifications and engines will be performed concurrent with (SDLM) by NADEP and Interservice Field Mod Teams (FMT)

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 33 Months

CONTRACT DATES: FY 1998: 12/96 (FY97 CONT.) FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: 9/99 (FY97 CONT.) FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (50) kits	3	0.6	8	0.5	4	0.2	23	1.4	12	0.8														50	3.5
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	3	0.6	8	0.5	4	0.2	23	1.4	12	0.8													50	3.5	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	11			3	1	6	6	6	5	4	4	4													
Out	9	3			4		6	6	6	5	4	4	3												

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										50
Out										50

Exhibit P-3a Individual Modification

MODIFICATION TITLE: AN/ARC-210 ECCM Radio (OSIP 11-92)

MODELS OF SYSTEMS AFFECTED: CH-53D (47), CH-53E (158), MH-53E (44), 249 Total TYPE MODIFICATION: MISSION/PERFORMANCE ENHANCEMENT

DESCRIPTION/JUSTIFICATION: The AN/ARC-210 is a combination UHF/VHF, AM/FM jam-resistant radio that was developed for ECCM interoperability with the Air Force, Army, and NATO. The radio provides dual UHF capability for CV based TACAIR; VHF FM for close air support and maritime channels; VHF AM for air traffic control; and ECCM capabilities using the Air Force developed waveforms (UHF-AM HAVE QUICK I and II), and the Army developed waveform (VHF-FM SINGGARS). The AN/ARC-210 can be controlled by either a remote control unit or via a MIL-STD-1553 multiplex data bus. The ECCM parameters and single channel preset information can be loaded via a CYZ-10 Data Transfer Device (DTD). The fill information can consist of word-of-day for HAVE QUICK and the KGV-10 transec variable, hopsets and frequency lock-out tables for SINGGARS. Applicable ECPs: CH-53E: PNCLA-4, CH-53D: PNCLA-61, MH-53E: CHPT-006

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Procurement of the validation/verification kits occurred in August 1992. CH validation/verification efforts were procured in FY 1995. Procurement of validation/verification for the MH-53E took place in FY97. Due to the deactivation of RH-53D's, the incorporation of modifications in RH-53D aircraft was canceled.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
CH-53E A Kit (ECP PNCLA-47)	70	0.8	33	0.3	13	0.2	14	0.1	28	0.3													158	1.7	
CH-53D A KIT (ECP PNCLA-61)	2	0.0	22	0.2	23	0.3																	47	0.5	
MH-53E A KIT (ECP CHPT-006)			1	*	6	0.1	4	*	5	*	5	0.1	5	0.1	9	0.1	9	0.1					44	0.5	
Installation Kits N/R		1.5				*																		1.5	
Installation Equipment																									
GFE ITEMS - CHE	4	0.5																					4	0.5	
Installation Equipment N/R		0.1																						0.1	
Engineering Change Orders																									
Data		0.7		0.5		0.2		0.3																1.6	
Training Equipment	4	0.3		0.1	1	0.2	3	0.4		*													8	0.9	
Support Equipment																								*	
ILS		0.4				*																		0.4	
Other Support		2.2		0.7		1.0		0.8		0.7		0.7												6.1	
Interim Contractor Support																									
Installation Cost	41	1.2	26	0.9	50	1.4	48	2.1	27	0.9	38	1.9	5	0.2	5	0.2	8	0.4	9	0.5			257	9.8	
Total Procurement		7.6		2.7		3.4		3.7		2.0		2.6		0.3		0.3		0.5		0.5				23.6	

- Notes:
1. Totals may not add due to rounding
 2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH-53D (47), CH-53E (158), MH-53E (44), 249 Total

MODIFICATION TITLE: AN/ARC-210 ECCM Radio (OSIP 11-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Concurrent with Naval Aviation Depot (NADEP) standard depot level maintenance (SDLM), augmented by NADEP and interservice field modification teams (FMTs).

ADMINISTRATIVE LEADTIME: 2 Months

PRODUCTION LEADTIME: 13 Months

CONTRACT DATES: FY 1998: Nov-97 FY 1999: Nov-98 FY 2000:

DELIVERY DATE: FY 1998: Dec-98 FY 1999: Dec-99 FY 2000:

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (175) kits	41	1.2	26	0.9	50	1.4	48	2.1	10	0.3														175	6.0
FY 1999 (21) kits									17	0.6	4	0.3												21	0.9
FY 2000 (33) kits											33	1.5												33	1.5
FY 2001 (5) kits											1	0.1	4	0.2										5	0.3
FY 2002 (5) kits													1	*	4	0.2								5	0.2
FY 2003 (9) kits															1	*	8	0.4						9	0.4
FY 2004 (9) kits																			9	0.5				9	0.5
FY 2005 () kits																									
To Complete () kits																									
TOTAL	41	1.2	26	0.9	50	1.4	48	2.1	27	0.9	38	1.9	5	0.2	5	0.2	8	0.4	9	0.5				257	9.8

Note:
1. Includes 8 Trainer Installations

Installation Schedule CH-53E (PNCLA-47) (Includes 4 Trainer Installations)

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	64	8	9	8	8	5	4	4	4	5	5	4	4	8	8	7	7								
Out	64	8	9	8	8	5	4	4	4	5	5	4	4	8	8	7	7								

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										162
Out										162

Installation Schedule MH-53E ECP CHPT-006 (Includes 2 Trainer Installations)

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	1			1		1	1	2	1	1	2	2	1	2	2	1	1	1	1	2	1	1	2	1	1
Out	1			1		1	1	2	1	1	2	2	1	2	2	1	1	1	1	2	1	1	2	1	1

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	2	2	2	2	2	2	2	3		46
Out	2	2	2	2	2	2	2	3		46

Installation Schedule CH-53D ECP PNCLA-61 (Includes 2 Trainer Installations)

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	2	4	4	4	4	6	6	7	7	3				2											
Out	2	4	4	4	4	6	6	7	7	3				2											

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										49
Out										49

Exhibit P-3a Individual Modification

MODIFICATION TITLE: CH-53E HELICOPTER NIGHT VISION SYSTEM (HNVS)(OSIP 12-92)

MODELS OF SYSTEMS AFFECTED: CH-53E (138) TYPE MODIFICATION: MISSION/PERFORMANCE ENHANCEMENT

DESCRIPTION/JUSTIFICATION: The Helicopter Night Vision System (HNVS) will provide an infrared night vision system for the CH-53E transport helicopters. The HNVS provides an improved night/all weather mission capability. This OSIP includes integration of the off the shelf APN-217(V)6 Doppler Navigation System and AAQ-16B FLIR. Applicable ECP: 0231-E001

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The AAQ-16B FLIR is a non-developmental Item (NDI) currently installed on a number of U.S. Army, Air Force, and Navy helicopters. DT-IIIa on the CH-53E/HNVS was completed in the third quarter FY 94. Extension of application for CH-53E was granted first quarter FY 95.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
A Kits	88	6.9	50	2.4																			138	9.3	
Installation Kits N/R		3.1																						3.1	
Installation Equipment																									
CH-53E installation equipment	88	47.1	50	9.6																			138	56.8	
Installation Equipment N/R																									
Engineering Change Orders																									
Data		0.6																						0.6	
Training Equipment	3	8.4																					3	8.4	
Support Equipment																									
ILS		1.0																						1.0	
Other Support		8.8	1.7			*																		10.6	
Interim Contractor Support																									
Installation Cost	89	6.1			6	0.5	44	3.0															139	9.5	
Total Procurement		81.9		13.7		0.5		3.0																	99.1

NOTE: Prior years include FY 1992 funding for CH-53E GPS validation, verification, and lab integration; FY 1993 and subsequent funding for CH-53E GPS is contained in OSIP 24-93.

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH-53E (138)

MODIFICATION TITLE: CH-53E HELICOPTER NIGHT VISION SYSTEM (HNVS)(OSIP 12-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Airframe modifications and engines will be performed concurrent with (SDLM) by NADEP and Interservice Field Mod Teams (FMT)

ADMINISTRATIVE LEADTIME: 5 Months

PRODUCTION LEADTIME: 18 Months

CONTRACT DATES: FY 1998: _____ FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (139) kits	89	6.1			6	0.5	44	3.0																139	9.5
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	89	6.1			6	0.5	44	3.0																139	9.5

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	89	1	1	2	2	12	12	12	8																
Out	89	1	1	2	2	12	12	12	8																

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										139
Out										139

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: MH Global Positioning System (NCS) (GPS) (OSIP 20-92)

MODELS OF SYSTEMS AFFECTED: MH-53E (68 Active, 24 Reserve) - 92 Total TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: The Global Positioning System (GPS) is a space-based radio positioning navigation system designed to provide highly accurate navigation data (position, velocity, and time) to properly equipped users. The GPS integration into the MH-53E was to be originally accomplished via installation of the Navigation/Communication System (NCS). This system met all AMCM and GIG (DOD guidance for integration of GPS) requirements. Due to funding constraints, the NCS was cancelled in FY-99. As a result, the OSIP below has been amended to reflect cancellation of the system and reconfiguration of two aircraft previously outfitted with NCS.
Applicable ECP: CH53-011

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The NAVSTAR GPS program completed Milestone IIIB in January 1992. Operational Testing (OT-IIIC) commenced in the third quarter FY95 with a recommendation of operationally suitable/operationally effective.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E		32.3																							32.3
PROCUREMENT																									
Installation Kits																									
MH-53E GPS Kit (ECP CH53-011)	2	5.7			8	0.3	12	0.2	19	0.4	25	0.6	13	0.4	13	0.4								92	8.0
Installation Kits N/R		1.2				0.6		0.2		0.7															2.7
Installation Equipment																									
GFE Reconfig							0.6																		0.6
Installation Equipment N/R		0.4																							0.4
Engineering Change Orders																									
ECP				0.1		*		0.2																	0.3
Data		1.6				*		0.1		0.4		0.3		0.1											2.4
Training Equipment	2	10.3							2	0.6		0.1												4	11.0
Support Equipment		0.2																							0.2
ILS		0.9		0.1		0.2		*		*		*													1.3
Other Support		4.9		3.6		1.1		0.5		0.8		0.5		0.3		0.1		*							11.8
Interim Contractor Support																									
Installation Cost	1	0.4			1	0.5	7	0.9	12	0.2	21	0.7	25	0.8	13	0.8	13	0.8						93	5.0
Total Procurement		25.5		3.8		2.9		2.6		3.1		2.1		1.6		1.2		0.8							43.7

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. Total Kit Qty includes 2 VALVER Kits and 2 Reconfigured Kits.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: MH-53E (68 Active, 24 Reserve) - 92 Total

MODIFICATION TITLE: MH Global Positioning System (NCS) (GPS) (OSIP 20-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION:

Initial val kit install is a turn key with verification install by NADEP Cherry Point. Subsequent installs will be accomplished by Field Mod Teams or concurrent with Standard Depot Level Maintenance (SDLM)

ADMINISTRATIVE LEADTIME:

5 Months

PRODUCTION LEADTIME:

5 Months

CONTRACT DATES: FY 1998:

Feb-98

FY 1999:

Feb-99

FY 2000:

Feb-00

DELIVERY DATE: FY 1998:

Sep-98

FY 1999:

Jul-99

FY 2000:

Jul-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 1998 & PY (9) kits	1	0.4			1	0.5	7	0.9															9	1.8
FY 1999 (12) kits									12	0.2													12	0.2
FY 2000 (21) kits											21	0.7											21	0.7
FY 2001 (25) kits													25	0.8									25	0.8
FY 2002 (13) kits															13	0.8							13	0.8
FY 2003 (13) kits																	13	0.8					13	0.8
FY 2004 () kits																								
FY 2005 () kits																								
To Complete () kits																								
TOTAL	1	0.4			1	0.5	7	0.9	12	0.2	21	0.7	25	0.8	13	0.8	13	0.8					93	5.0

Notes:

- (93) Installs= (88) Phase/II GPS+ (2) NCS Reconfigurations+ (2) GPS Trnrs+ (1) Validation Install
- Trnr Kit Installs not separately priced in FY 1996.
- One prior year kit was not installed

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	1	1				2	2	2	1	3	3	3	3	6	5	5	5	7	6	6	6	4	3	3	3
Out	1		1				2	2	2	1	3	3	3	3	6	5	5	5	7	6	6	6	4	3	3

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	4	3	3	3						93
Out	4	4	4	4						93

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: H-53 GLOBAL POSITIONING SYSTEM (GPS) (OSIP 24-93)

MODELS OF SYSTEMS AFFECTED: CH-53D (47); CH-53E (164); RH-53D (2); Total: 213 TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: The Global positioning System (GPS) is a space-based radio positioning navigation system designed to provide highly accurate navigation data (position, velocity, and time) to properly equipped users. It will provide the CH-53E with an improved navigation capability necessary to meet overall navigation and mission requirements. GPS operational characteristics and requirements in Naval Aircraft are specified in DCP No. 133, NAVSTAR GPS, of April 1990 and Joint Chiefs of Staff Master Navigation Plan, JCS-SM-266-83 of 27 May 1983. GPS will replace the current airborne navigation system (VOR/TACAN) as a primary means of navigation in CONUS, by the year 2000. Applicable ECPs: CH/RH-53D: 1107R1; CH-53E: PN-51

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

The GPS is a non-developmental item currently being installed in all Navy aircraft. GPS completed CH-53E DT/OT testing in May 1993 with extension of application granted third quarter FY 1995. Due to deactivation of RH-53's the incorporation of this modification in RH-53D was cancelled.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
CH-53D/RH-53D Kit ECP 1107R1	4	1.1	45	2.6																				49	3.7
CH-53E Kit ECP PN51	102	3.1	36	2.6	26	0.9																		164	6.6
Installation Kits N/R		1.6																							1.6
Installation Equipment																									
GPS (CH-53E) Equip	3	0.5																						3	0.5
PPS Equip																									*
TACAN RTS (CH-53E) Equip																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data		0.7		0.1		*																			0.8
Training Equipment	5	0.8		*	1	0.2																		6	1.0
Support Equipment																									
ILS		0.0																							*
Other Support		3.4		1.7		1.0		0.3		0.1															6.5
Interim Contractor Support																									
Installation Cost	38	1.2	34	1.0	67	3.5	50	1.9	21	0.8														210	8.4
Total Procurement		12.2		8.1		5.6		2.2		0.9															29.0

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. 210 Installs = 213 kits procured (1- Lab, 2 -RH's) were not installed.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH53D (47); CH53E (164); RH53D (2); Total: 213 MODIFICATION TITLE: H-53 GLOBAL POSITIONING SYSTEM (GPS) (OSIP 24-93)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Modification Teams and SDLMs

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 18 Months

CONTRACT DATES: FY 1998: 11/97 FY 1999: 11/98 FY 2000: 11/99

DELIVERY DATE: FY 1998: 5/99 FY 1999: 5/00 FY 2000: 5/01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (210) kits	38	1.2	34	1.0	67	3.5	50	1.9	21	0.8														210	8.4
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	38	1.2	34	1.0	67	3.5	50	1.9	21	0.8													210	8.4	

Note:

- Does not include 6 Trainer Installations.

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	72	17	17	17	16	13	13	12	12	6	5	5	5												
Out	72	17	17	17	16	13	13	12	12	6	5	5	5												

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										210
Out										210

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: Incorporation of #2 Engine Fire Detectors (OSIP 20-94)

MODELS OF SYSTEMS AFFECTED: CH-53E -167 (163 Active, 4 Reserve), MH-53E (44) Total 211 Aircraft TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: The H-53E has experienced two Class "A" mishaps and several incidents as a result of undetected fires and/or overheating in the #2 engine compartment. The program will install a Commercial Off-The-Shelf (COTS) temperature sensor in the #2 engine bay to provide aircrews advance warning of overheat conditions that will provide the Aircrew with a warning of potentially hazardous heat build-up in the number two engine compartment.

Applicable ECP: PN56R1

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The Contractor has conducted a survey of the #2 engine bay to measure temperatures at various engine power settings and developed a warning system utilizing COTS components. Validation Installation and Testing was completed July 1996. A government field activity will install a COTS temperature sensor and associated cockpit warning lights.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
RDT&E																										
PROCUREMENT																										
Installation Kits																										
CH-53E Kits ECP PN56R1	41	0.4	39	0.3	40	0.4	40	0.4	7	0.1														167	1.7	
MH-53E Kits ECP PN56R1	13	0.2	9	0.1	8	0.1	8	0.1	6	0.1														44	0.6	
Installation Kits N/R		0.2																							0.2	
Installation Equipment																										
Installation Equipment N/R		*																							*	
Engineering Change Orders																										
Data		0.1		0.1		0.1																			0.2	
Training Equipment					1	*	5	*																	6	0.1
Support Equipment		*																							*	
ILS		*		*																					*	
Other Support		0.4		0.4		0.3		0.1		0.1		*													1.3	
Interim Contractor Support																										
Installation Cost	1	*	24	0.2	60	0.5	43	0.4	52	0.4	37	0.3													217	1.8
Total Procurement		1.3		1.2		1.4		1.0		0.7		0.4													5.9	

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. # of installs procured includes a total of 6 trainers

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH-53E -167 (163 Active, 4 Reserve), MH-53E (44) MODIFICATION TITLE: Incorporation of #2 Engine Fire Detectors (OSIP 20-94)
Total 211 Aircraft plus 6 Trainers.

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Concurrent with Naval Aviation Depot Standard Depot Level Maintenance (SDLM) augmented by NADEP interservice Field Mod Teams

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 13 Months

CONTRACT DATES: FY 1998: Feb-98 FY 1999: Feb-99 FY 2000: Feb-00

DELIVERY DATE: FY 1998: Mar-99 FY 1999: Mar-00 FY 2000: Mar-01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (151) kits	1	*	24	0.2	60	0.5	43	0.4	23	0.2														151	1.3
FY 1999 (53) kits									29	0.2	24	0.2												53	0.4
FY 2000 (13) kits											13	0.1												13	0.1
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	1	*	24	0.2	60	0.5	43	0.4	52	0.4	37	0.3												217	1.8

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	25	14	15	15	16	9	9	12	13	4	12	24	12	25	12										
Out	25	14	15	15	15	9	9	12	13	4	12	24	12	25	13										

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										217
Out										217

Exhibit P-3a Individual Modification

MODIFICATION TITLE: AVIATOR NIGHT VISION IMAGING SYSTEM HEAD-UP DISPLAY (ANVIS/HUD) AN/AVS-7 (OSIP 21-94)

MODELS OF SYSTEMS AFFECTED: CH-53D (47); CH-53E (160); Total 207 Aircraft & 5 Trainers TYPE MODIFICATION: MISSION/PERFORMANCE ENHANCEMENT

DESCRIPTION/JUSTIFICATION: This modification incorporates the use of a Head-Up Display (HUD) with the AN/AVS-6 Night Vision Goggles (NVG). Helicopter crews perform missions at night using NVGs. Although NVGs provide aircrews with enhanced capability to operate during periods of darkness, they increase pilot workload due to critical flight instruments being placed outside of the visual scan. The ANVIS/HUD allows critical flight information to be displayed through the NVGs, thereby decreasing pilot workload and enhancing flight safety and mission effectiveness.

Applicable ECPs: CH-53E - PN47; CH-53D - PN61R1

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The ANVIS/HUD is a nondevelopmental system currently in use on the USMC UH-1N and CH-46, and the US Army UH-60 and CH-47. This system is being procured under an Army Contract with validation installation and DT/OT completed in FY 1996.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
CH-53D Kit ECP PN61R1									2	*			14	0.2	14	0.2	17	0.2					47	0.6	
CH-53E Kit ECP PN47	30	0.4	42	0.6			15	0.2	28	0.4	20	0.3	13	0.2			12	0.2					160	2.2	
Installation Kits N/R		3.6							1.1															4.7	
Installation Equipment																									
CH-53D/E Install Equip (incl 5 traine	30	0.5	44	0.9			17	0.9	30	1.6	20	1.1	28	1.5	14	0.8	29	1.8					212	9.0	
Installation Equipment N/R																									
Engineering Change Orders																									
Data		0.1		0.1		*			0.1		0.1		0.1											0.5	
Training Equipment		0.1	4	0.1		0.3		0.1					1	*										5	0.6
Support Equipment				0.2		0.2																			0.3
ILS		0.3		0.2				*			0.2														0.7
Other Support		1.0		0.5		0.7		0.6		0.9		1.0		0.9											5.5
Interim Contractor Support																									
Installation Cost	1		8	0.2	31	0.5	33	0.7	18	0.4	23	0.6	22	0.6	27	0.7	20	0.5	29	0.7			212	4.8	
Total Procurement		6.0		2.6		1.7		2.5		4.4		3.3		3.4		1.7		2.7		0.7				28.9	

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH-53D (47); CH-53E (160); Total 207 Aircraft & 5 Trainers MODIFICATION TITLE: AVIATOR NIGHT VISION IMAGING SYSTEM HEAD-UP DISPLAY (ANVIS/HUD) AN/AVS-7 (OSIP 21-94)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Concurrent with Standard Depot Level Maintenance (SDLM) augmented by Interservice Field Mod Teams

ADMINISTRATIVE LEADTIME: 7 Months PRODUCTION LEADTIME: 8 Months

CONTRACT DATES: FY 1998: MAY 98 FY 1999: MAY 99 FY 2000: MAY 00

DELIVERY DATE: FY 1998: JAN 99 FY 1999: JAN 00 FY 2000: JAN 01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (76) kits	1		8	0.2	31	0.5	33	0.7	3	0.1														76	1.4
FY 1999 (15) kits									15	0.3														15	0.3
FY 2000 (30) kits											23	0.6	7	0.2										30	0.8
FY 2001 (20) kits													15	0.4	5	0.1								20	0.5
FY 2002 (28) kits															22	0.6	6	0.1						28	0.7
FY 2003 (14) kits																	14	0.3						14	0.3
FY 2004 (29) kits																				29	0.7			29	0.7
FY 2005 () kits																									
To Complete () kits																									
TOTAL	1		8	0.2	31	0.5	33	0.7	18	0.4	23	0.6	22	0.6	27	0.7	20	0.5	29	0.7				212	4.8

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	9	8	8	8	7	9	8	8	8	5	5	4	4	6	6	6	5	6	6	5	5	7	7	7	6
Out	9		8	8	8	8	8	8	8	8	8	6	4	6	6	6	5	6	6	5	5	7	7	7	6

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	5	5	5	5	8	7	7	7		212
Out	5	5	5	5	8	7	7	7		212

Exhibit P-3a Individual Modification

MODIFICATION TITLE: CRASHWORTHY PILOT AND CO-PILOT SEATS (OSIP 22-94)

MODELS OF SYSTEMS AFFECTED: CH-53E (96), MH-53E (16) Total 112 Acft TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: The Simula Armored Crash Attenuating seats for the pilot and co-pilot are designed to provide enhanced crash survivability. Production installation of this seat began with CH-53E 153059 and MH-53E 163051. Retrofit of the remaining H-53E aircraft provides enhanced aircrew protection and also standardizes configuration throughout the fleet.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The Simula Armored Crash Attenuating seats were first qualified for use on the CH/RH-53D aircraft. Qualification and production incorporation of the seats on the CH/MH-53E aircraft was accomplished under Sikorsky Aircraft ECP 2160S1/2632S1. This program retrofits CH/MH-53E aircraft delivered prior to production incorporation crash-attenuating seats.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
CH-53E CFE Kit ECP 2160S1	96	0.1																						96	0.1
MH-53E CFE Kit ECP 2632S1	16	*																						16	*
Installation Kits N/R		*																							*
Installation Equipment																									
Simula Seats (2 per A/C) - CH	210	5.9																						210	5.9
Simula Seats (2 per A/C) - MH	20	0.5																						20	0.5
Installation Equipment N/R																									
Engineering Change Orders																									
Data		0.1																							0.1
Training Equipment	3	*																						3	*
Support Equipment		*																							*
ILS		*																							*
Other Support		*		0.1																					0.1
Interim Contractor Support																									
Installation Cost	42	0.6	70	0.3			3	*																115	0.9
Total Procurement		7.3		0.4				*																	7.8

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH-53E (96), MH-53E (16) Total 112 Acft MODIFICATION TITLE: CRASHWORTHY PILOT AND CO-PILOT SEATS (OSIP 22-94)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Concurrent with Naval Aviation Depot (NADEP) Standard Depot Level Maintenance (SDLM), and by NADEP/interservice Field Mod Teams

ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 11 Months

CONTRACT DATES: FY 1998: _____ FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (115) kits	42	0.6	70	0.3			3	*																115	0.9
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	42	0.6	70	0.3			3	*																115	0.9

Note:

1. Includes 3 Trainer Installations.

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	112					3																			
Out	112					3																			

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										115
Out										115

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Helicopter Night Vision Goggle (NVG) Compatible Exterior Lighting (OSIP 26-94)

MODELS OF SYSTEMS AFFECTED: CH-53D (47); CH-53E (162); MH-53E (44), RH-53D (2 Res) 255 Total & 8 Trainers TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: Current doctrine requires Naval Helicopters to be operated at night by aircrew utilizing NVGs. Standard aircraft exterior position lights are not compatible with NVGs and can compromise mission accomplishments. Installation of NVG Compatible Exterior Lighting increases both safety and tactical mission effectiveness during flights involving multiple aircraft utilizing NVGs. Applicable ECPs: CH-53D/RH-53D: PN59; MH-53E: PN57; CH-53E: PN53R1

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: This Congressionally mandated program uses off the shelf hardware to modify exterior lighting on H-53 helicopters. Initial installation and test for the CH-53E commenced fourth quarter of FY 1995 and continued through 2nd QTR FY96. Validation installation and testing commenced in 3rd quarter FY96 for the MH-53E and CH-53D. Kit quantities reflect 2 RH-53D Kits (VAL/VER) procured in FY94 that will not be installed due to deactivation of RH-53Ds.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
CH-53D/RH-53D Kits (ECP PN59)	49	0.3																					49	0.3	
CH-53E Kits (ECP PN53R1)	162	1.1																					162	1.1	
MH-53E Kits (ECP PN57)	44	0.4																					44	0.4	
Installation Kits N/R		0.4																						0.4	
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data		0.1		0.1		*																		0.2	
Training Equipment	8	0.1				*																	8	0.1	
Support Equipment		*																						*	
ILS		0.1		0.1																				0.2	
Other Support		0.3		0.1																				0.4	
Interim Contractor Support																									
Installation Cost	4	0.1	63	0.8	114	0.9	73	0.8	7	0.1													261	2.7	
Total Procurement		2.9		1.1		1.0		0.8		0.1														5.9	

Notes:

- Totals may not add due to rounding
- Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH-53D (47); CH-53E (162); MH-53E (44) MODIFICATION TITLE: Helicopter Night Vision Goggle (NVG) Compatible Exterior Lighting (OSIP 26-94)
RH-53D (2 Res) 255 Total & 8 Trainers

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Concurrent with Naval Aviation Depot (NADEP) Standard Depot Level Maintenance (SDLM) and by NADEP/interservice Field Mod Teams

ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 1998: _____ FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (261) kits	4	0.1	63	0.8	114	0.9	73	0.8	7	0.1														261	2.7
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	4	0.1	63	0.8	114	0.9	73	0.8	7	0.1														261	2.7

1. Installations do not include 2 RH-53D kits.

Installation Schedule, ECP PNCLA-59 (CH-53D) (includes 2 trainer installs)

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	16	4	4	4	12	2	2	2	1	2															
Out	16	4	4	4	12	2	2	2	1	2															

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										49
Out										49

Installation Schedule, ECP PNCLA-53R1 (CH-53E) (includes 4 trainer installs)

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	49	17	17	17	16	11	12	12	12	3															
Out	49	17	17	17	16	11	12	12	12	3															

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										166
Out										166

Installation Schedule, ECP PNCLA-57 (MH-53E) (includes 2 trainer installs)

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	2	7	7	7	2	6	5	4	4	2															
Out	2	7	7	7	2	6	5	4	4	2															

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										46
Out										46

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: TAIL ROTOR DRIVE SHAFT DISCONNECT COUPLING MONITOR (OSIP 35-94)

MODELS OF SYSTEMS AFFECTED: CH-53E (167), MH-53E (44), 211 Total Aircraft & 6 Trainers TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: The H-53E community has experienced several Class "A" mishaps due to failure of the Tail Rotor Drive Shaft disconnect coupling duplex bearing. This program will install a vibration/temperature sensor on the disconnect coupling to warn aircrews of duplex bearing degradation or impending failure.
Applicable ECPs: 2175R4/2666R4.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The Coupling Monitor mod program commenced in FY92 with installation of 4 prototype systems for a one year demo. After successful completion of the demo four VAL/VER kits (2CH/2MH) were procured in FY95 with installation scheduled in FY96/97. In June 96 a CH53E experienced a Class "A" mishap as a result of a main rotor swashplate bearing failure. VAL was completed Aug 98, and VER installations of the Coupling Monitor was deferred so that the system could be expanded and redesigned to incorporate monitoring of temperature and vibration in the main rotor swashplate assembly. In April 97 the contract for the Coupling Monitor was modified to include the additional functionality and to accelerate procurement and retrofit of the Bearing Monitor system. The Preliminary Design Review for the modified system was held in January 97 and the critical Design Review was held in April 97.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
CH-53E/MH-53E Kits ECP 2175R4/2666	4	0.1	86	4.0	124	5.8																		214	9.9
Installation Kits N/R		2.9		3.9																					6.8
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data		0.7						0.2																	0.8
Training Equipment		*	0.9		1	*	5	0.6																6	1.5
Support Equipment		0.1		*		*																			0.2
ILS		0.7				0.1		0.2																	0.9
Other Support		*		0.4		0.1		0.4																	1.0
Interim Contractor Support																									
Installation Cost	2	0.1	84	1.4	116	1.6	1	*	5	0.1														208	3.3
Total Procurement		4.6		10.6		7.7		1.4		0.1															24.4

Notes:

- Totals may not add due to rounding
- Asterisk indicates amount less than \$50K
- 2 FY95 kits procured but not installed, 1 Kit for MH Prototype procured but not installed; 9 @ AMARC = 208 total installs.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH-53E (167); MH-53E (44), 211 Total Aircraft & 6 Trainers MODIFICATION TITLE: TAIL ROTOR DRIVE SHAFT DISCONNECT COUPLING MONITOR (OSIP 35-94)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Turn-key - Contractor Field Mod Teams

ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 1998: Mar-98 FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: Mar-99 FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (208) kits	2	0.1	84	1.4	116	1.6	1	*	5	0.1														208	3.3
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	2	0.1	84	1.4	116	1.6	1	*	5	0.1														208	3.3

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	86	29	29	29	29	1				5															
Out	86	29	29	29	29	1				5															

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										208
Out										208

Exhibit P-3a Individual Modification

MODIFICATION TITLE: ATTENUATING TROOP SEATS (OSIP 20-97)

MODELS OF SYSTEMS AFFECTED: CH-53D (46), CH-53E (166), MH-53E (44) TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: Utility and Troop transport mission increasing in importance. Current troop/passenger seats are 1950 generation. Design does not provide impact protection of current rotorcraft seat designs. The impulsive type loading experienced during survivable mishaps produces amplified seat/floor anchor loads and potentially injurious occupant decelerations. Due to this operational deficiency, NDI crashworthy troop seat program established. NDI are lightweight off-the-shelf seats that provide protection by limiting an occupants inertial loading to survivable levels by attenuating impact forces to below survivable ranges and enables the occupant to rapidly egress a downed aircraft are being sought. Applicable ECP: H53-010

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: NDI procedures utilized for the Procurement, Installation and Support of the seats for all 47 CH-53D Helicopters. Funding for the 47 seats and associated requirements were appropriated in 1997. Program consists of a one-time procurement with a turn-key installation approach. FY-98 through 05 provides for procurement, installation, and support of the CH-53E and MH-53E helicopters.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
CH-53D Kit			46	4.6																				46	4.6
CH-53E Kit							39	3.5	37	3.7	36	3.7	28	3.0	26	2.8								166	16.7
MH-53E Kit							2	0.8							18	1.9	24	2.6						44	5.3
Installation Kits N/R						0.3		0.1		0.1		0.1													0.6
Installation Equipment																									
Seat testing				0.3																					0.3
Installation Equipment N/R																									
Engineering Change Orders																									
XXX Kit ECO XXX				0.3																					0.3
Data				0.2				0.4																	0.6
Training Equipment																									
Support Equipment																									
ILS				0.3				0.1		0.2		0.3													0.9
Other Support				1.2		0.7		1.5		0.2		0.1		0.1		0.2		0.3			0.2				4.6
Interim Contractor Support																									
Installation Cost			46	1.5					35	0.9	30	0.8	59	1.5	18	0.5	44	1.2	24	0.7				256	7.0
Total Procurement				8.4		1.0		6.4		5.1		5.0		4.6		5.5		4.1		0.9				41.0	

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH-53D (46), CH-53E (166), MH-53E (44) MODIFICATION TITLE: ATTENUATING TROOP SEATS (OSIP 20-97)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Modification Teams and SDLMs

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 11 Months

CONTRACT DATES: FY 1998: _____ FY 1999: Dec-98 FY 2000: Dec-99

DELIVERY DATE: FY 1998: _____ FY 1999: Nov-99 FY 2000: Nov-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (46) kits			46	1.5																				46	1.5
FY 1999 (41) kits									35	0.9	6	0.2												41	1.1
FY 2000 (37) kits											24	0.6	13	0.3										37	1.0
FY 2001 (36) kits													36	0.9										36	0.9
FY 2002 (28) kits													10	0.2	18	0.5								28	0.7
FY 2003 (44) kits																	44	1.2						44	1.2
FY 2004 (24) kits																				24	0.7			24	0.7
FY 2005 () kits																									
To Complete () kits																									
TOTAL			46	1.5					35	0.9	30	0.8	59	1.5	18	0.5	44	1.2	24	0.7				256	7.0

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	46									8	9	9	9	7	7	8	8	15	14	15	15	4	4	5	5
Out	46									8	9	9	9	7	7	8	8	15	14	15	15	4	4	5	5

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	11	11	11	11	6	6	6	6		256
Out	11	11	11	11	6	6	6	6		256

Exhibit P-3a Individual Modification

MODIFICATION TITLE: AN/APR-39A (V) 2 UPGRADE (OSIP 6-98)

MODELS OF SYSTEMS AFFECTED: CH-53E/MH-53E 163 CH-53E, 44 MH-53E TYPE MODIFICATION: MISSION/MISSION ENHANCEMENT

DESCRIPTION/JUSTIFICATION: The AN/APR-39A (V) 2 is a passive threat warning system primarily intended for use on helicopters and slow fixed-wing aircraft. Its purpose is to monitor the RF environment and detect, analyze, discriminate, identify and prioritize threats, unknown and friendly radar and missile guidance signals. Aircrew warning is provided by means of alphanumeric symbology on a 3-inch CRT cockpit display and an aural warning via the aircraft Interconnecting Communication System (ICS). This change is being incorporated to improve aircraft survivability by providing for detection and display of surface-to-air missile and anti-aircraft radar threats. GFE "P" kits are to be procured under common OSIP 14-90, PMA-272. ECP: H53-008R1.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Retrofit installations were originally scheduled to commence in FY92 (OSIP 6-91), however, the APR-39A (V) 2 failed technical evaluation delaying modifications as originally planned. System successfully passed a Combined OPEVAL/TECHEVAL ON UH-1N aircraft, during Oct 95 system was approved for retrofit on other platforms.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
CH-53E					1	*	26	0.3	28	0.3	30	0.4	13	0.2	5	0.1					60	0.9	163	2.2	
MH-53E																	2	*			42	0.6	44	0.6	
Installation Kits N/R																	0.2							0.2	
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data						*	0.2										0.1		0.1					0.5	
Training Equipment							*	4	*											2	0.2	6	0.2	*	
Support Equipment							*																	*	
ILS							*		*								*		*					0.1	
Other Support						0.2	0.7		0.3		0.3		0.1		0.1		0.3		0.2		0.7			2.8	
Interim Contractor Support																									
Installation Cost							2	0.1	25	0.6	32	0.8	30	0.8	13	0.4	5	0.1	2	0.2	104	3.3	213	6.2	
Total Procurement						0.3	1.4		1.3		1.4		1.1		0.5		0.8		0.5		5.6			12.9	

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. Kit buys incl 2 Val/Ver (1 CH/1 MH)

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH-53E/MH-53E 163 CH-53E, 44 MH-53E MODIFICATION TITLE: AN/APR-39A (V) 2 UPGRADE (OSIP 6-98)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Concurrent with Naval Aviation Depot (NADEP) Standard Depot Level Maintenance (SDLM), augmented by NADEP and interservice field mod teams

ADMINISTRATIVE LEADTIME: 5 Months PRODUCTION LEADTIME: 6 Months

CONTRACT DATES: FY 1998: _____ FY 1999: Feb-99 FY 2000: Feb-00

DELIVERY DATE: FY 1998: _____ FY 1999: Aug-99 FY 2000: Aug-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (1) kits							1	0.1																1	0.1
FY 1999 (26) kits							1	0.1	25	0.6														26	0.7
FY 2000 (32) kits											32	0.8												32	0.8
FY 2001 (30) kits													30	0.8										30	0.8
FY 2002 (13) kits															13	0.4								13	0.4
FY 2003 (5) kits																	5	0.1						5	0.1
FY 2004 (2) kits																			2	0.2				2	0.2
FY 2005 () kits																									
To Complete (104) kits																						104	3.4	104	3.4
TOTAL							2	0.1	25	0.6	32	0.8	30	0.8	13	0.4	5	0.1	2	0.2	104	3.4	213	6.3	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In					1		1		7	7	7	4	8	8	8	8	8	8	8	6	4	3	3	3	
Out					1		1		7	7	7	4	8	8	8	8	8	8	8	6	4	3	3	3	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	2	1	1	1	1	1			104	213
Out	2	1	1	1	1	1			104	213

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: HELICOPTER INTEGRATED MECHANICAL DIAGNOSTIC SYSTEM (IMDS) (OSIP 7-98)

MODELS OF SYSTEMS AFFECTED: CH-53E - 166; MH-53E - 44 TYPE MODIFICATION: SAFETY, READINESS AND MAINTAINABILITY

DESCRIPTION/JUSTIFICATION: IMD is a helicopter monitoring and diagnostics system that provides continuous on board monitoring and diagnostics of engine health, gearbox and drive train vibrations, oil debris, rotor track and balance, and crash protected Cockpit Voice and Flight Data recorder (CVFDR). CVFDR, an integral part of the IMD system, will perform the required function of a Flight Incident Recorder (FIR). An Early Operational Assessment (EOA) of a Commercial Off-the-Shelf system on two CH-53E's is scheduled for FY96-98. Lessons learned from this effort will be incorporated into the solicitation for the fleet wide IMD effort of which the H-53E is the lead platform.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The H-53E prototype effort in FY98-99 is a pilot program to be conducted at HMT-302 to validate a production representative system prior to Milestone III decision in FY00. An integration verification period for the remaining H-53E platforms will then be followed by production.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
CH-53E A Kit									6	1.1	3	0.5	10	1.9	10	1.9	18	3.5	18	3.6	101	21.6	166	34.0	
MH-53E A Kit															4	0.8	4	0.8	4	0.8	20	4.3	32	6.6	
MH-53E Reserve Kit																	3	0.6	3	0.6	6	1.2	12	2.4	
Installation Kits N/R						3.3			2.9															6.2	
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data						0.5			0.9			1.4		0.4		0.5								3.6	
Training Equipment										1	0.2					7	0.9							8	1.1
Support Equipment											0.1		0.1		0.1		0.1		0.2					0.4	
ILS						0.6		0.6		1.3		0.5		0.5		0.4		0.6		0.6		3.0		8.1	
Other Support						3.3		5.1		3.4		1.8		0.8		2.0		2.1		3.0		11.4		32.9	
Interim Contractor Support										0.1		0.5		0.2		0.7		1.1		1.5		20.6		24.7	
Installation Cost												7	0.9	3	0.5	10	1.6	21	2.4	25	4.0	152	28.9	218	38.2
Total Procurement						7.6		9.5		7.5		4.7		4.4		8.3		11.3		14.1		91.0		158.4	

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH-53E - 166; MH-53E - 44

MODIFICATION TITLE: HELICOPTER INTEGRATED MECHANICAL DIAGNOSTIC SYSTEM (IMDS) (OSIP 7-98)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: CONTRACTOR INSTALLED

ADMINISTRATIVE LEADTIME: 1 Months

PRODUCTION LEADTIME: 9 Months

CONTRACT DATES: FY 1998: _____

FY 1999: _____

FY 2000: 10-99

DELIVERY DATE: FY 1998: _____

FY 1999: _____

FY 2000: 7-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1998 & PY () kits																										
FY 1999 () kits																										
FY 2000 (7) kits											7	0.9												7	0.9	
FY 2001 (3) kits													3	0.5										3	0.5	
FY 2002 (10) kits															10	1.6								10	1.6	
FY 2003 (21) kits																	21	2.4						21	2.4	
FY 2004 (25) kits																			25	4.0				25	4.0	
FY 2005 (25) kits																					25	4.0		25	4.0	
To Complete (127) kits																							127	24.9	127	24.9
TOTAL												7	0.9	3	0.5	10	1.6	21	2.4	25	4.0	152	28.9	218	38.2	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In														2	2	2	1	1	1	1		2	2	3	3
Out														2	2	2	1	1	1	1		2	2	3	3

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	5	5	5	6	6	6	6	7	152	218
Out	5	5	5	6	6	6	6	7	152	218

Exhibit P-3a Individual Modification

MODIFICATION TITLE: TACTICAL MISSION PLANNING SYSTEM (TAMPS) (OSIP 8-98)

MODELS OF SYSTEMS AFFECTED: CH-53D/E & MH-53E TYPE MODIFICATION: READINESS AND MAINTAINABILITY

DESCRIPTION/JUSTIFICATION: The Tactical Air Mission Planning System (TAMPS) is a computer based mission planning system. This system uses platform specific software to aide in the preparation of flight plans for tactical scenarios. Current H-53 program reflects the base minimum needed to be incorporated in the TAMPS core without specific platform requirements.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: TAMPS has been identified as the only mission planning system for all Naval Mission Planning Systems. This direction stems from a CNO memo SER N8/3U653136 of 10 Sept 93.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Installation Kits N/R																									
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data																									
Training Equipment																									
Support Equipment																									
ILS																									
Other Support						0.4		0.6		0.2		0.2													1.2
Interim Contractor Support																									
Installation Cost																									
Total Procurement						0.4		0.6		0.2		0.2													1.2

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: Service Life Extension Program (OSIP 14-00)

MODELS OF SYSTEMS AFFECTED: CH-53E (166), MH-53E (44) TYPE MODIFICATION: SAFETY, MISSION/PERFORMANCE ENHANCEMENT

DESCRIPTION/JUSTIFICATION: To meet United States Marine Corps (USMC) heavy lift and United States Navy (USN) Airborne Mine Countermeasures (AMCM) requirements the H-53 will be active in the fleet through the year 2025. A Service Life Extension Program (SLEP) is required to extend the life of the H-53E airframe from the current 6,000 hour fatigue life limit to 12,000 hours in order to meet the 2025 goal. Additionally, to enhance the safety and reduce the cost of ownership of the H-53E, basic component improvements are also required to ensure supportability. Improvements include tail rotor drive shaft discount modifications and replacement of Kapton wiring with SPEC 55 wiring. Without the SLEP, aircraft inventory (due to expended airframe fatigue life) would quickly fall below PAA and continue until the entire fleet was eventually grounded. The Slep kit will contain a mixt of NDI, stock issue and 6.4 development items.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Development of SLEP OSIP resulted from Sikorsky ECP, which was a result of the interim SLAP report (Feb 96). Milestone III decision will be FY 02, after successful completion of Validation. Production to follow beginning in FY 03.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
CH-53E											1	1.8			7	13.9	11	21.4	14	27.8	133	183.0	166	247.9	
MH-53E ACTIVE											1	1.8							1	2.0	30	52.2	32	56.0	
MH-53E RESERVE																					12	22.0	12	22.0	
Installation Kits N/R									17.8			3.3												21.1	
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data											0.2					1.3		0.2						1.8	
Training Equipment																4	0.6							4	0.6
Support Equipment													0.1		*		0.1		0.1			1.5		1.7	
ILS									0.2		0.2		0.1		0.1									0.7	
Other Support									0.3		0.8		0.8		1.6		1.3		1.6			4.6		11.0	
Interim Contractor Support																									
Installation Cost														1	2.8	1	3.2	7	23.6	15	37.1	190	667.7	214	734.3
Total Procurement									18.3		8.2		3.7		20.7		46.6		68.5		931.1		1,097.1		

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. Qty's in FY 01 are for validation/verification

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH-53E (166), MH-53E (44) MODIFICATION TITLE: Service Life Extension Program (OSIP 14-00)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Modification Teams and SDLMs

ADMINISTRATIVE LEADTIME: _____ Months PRODUCTION LEADTIME: _____ Months

CONTRACT DATES: FY 1998: _____ FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1998 & PY () kits																										
FY 1999 () kits																										
FY 2000 () kits																										
FY 2001 (2) kits													1	2.8	1	3.2								2	6.0	
FY 2002 () kits																										
FY 2003 (11) kits																	7	23.6	4	9.9				11	33.5	
FY 2004 (11) kits																			11	27.2				11	27.2	
FY 2005 (15) kits																					15	52.5		15	52.5	
To Complete (175) kits																							175	615.2	175	615.2
TOTAL													1	2.8	1	3.2	7	23.6	15	37.1			190	667.7	214	734.4

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In																	1					1			
Out																		1						1	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	2	2	2	1	4	4	4	3	190	214
Out			2	2	2	1	4	4	197	214

Exhibit P-40, BUDGET ITEM JUSTIFICATION										DATE: February 1999			
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications								P-1 ITEM NOMENCLATURE H-60 Modifications					
Program Element for Code B Items:								Other Related Program Elements					
	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
QTY		A											
COST (In Millions)	256.1	A	46.4	71.1	137.1	56.8	20.3	24.8	23.9	22.8	21.8		681.1
<p>This line item funds modifications to H-60 series aircraft. The H-60 series current inventory is comprised of: 38 HH-60H, 148 SH-60B, and 75 SH-60F aircraft. The design service life of these weapon systems is 10,000 hours, the average service life remaining is as follows: SH-60B 4,946 hours, SH-60F 7,557 and HH-60H 7,691. The SH-60B is the vehicle component of the LAMPS MK III Weapon System on surface combatants. The primary missions of the SH-60B are Anti-Submarine (ASW) and Anti-Surface Warfare (ASUW). The SH-60F is an ASW, dipping sonar helicopter assigned to carrier airwings based aboard aircraft carriers (CV). The SH-60F primary mission is protection of the CV inner zone. The HH-60H is a Combat Search and Rescue (CSAR) and Special Warfare Support (SWS) helicopter assigned to carrier airwings aboard CVs and also in two reserve squadrons. SH-60B requirements are driven by the number of LAMPS MK III ships to be supported. (Reduction in the number of carrier airwings and a change in CV Helo squadron PAA/mix to 3 SH-60F and 4 HH-60Hs in FY 2002 have precipitated the FY 1998 program to convert SH-60F helos to HH-60H helos.) The overall goal of the modifications budgeted in FY 2000 is to continue the Block I upgrade, Forward Looking Infrared (FLIR) efforts, the T-700 Engine Improvement program, the Armed Helo program, and the Integrated Mechanical Diagnostic System (IMDS). The specific modifications budgeted and programmed are:</p>													
(TOA, \$ in Millions)													
OSIP No.	Description	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
04-91	Block I Upgrade	154.5	15.2	24.5	1.6								195.9
48-92	FLIR/HELLFIRE	7.7		0.4	0.6								8.7
14-94	GPS MAR Compliance Mission Data Loader	3.3	0.5	0.5	0.2								4.4
15-94	Forward Looking Infrared	31.6	8.9	25.1	28.8	29.5							123.9
23-95	Downed Aircrew Locating System	1.3	*										1.3
24-95	Wirestrike Protection System	2.6	0.3										2.9
25-95	EL Formation Lights	0.9	0.2										1.1
26-95	Aircraft Survivability Equipment (ASE)	23.7	0.4	2.1	20.9								47.0
27-95	Night Vision Goggles (NVG HUD)	3.3	0.1	0.7									4.0
08-96	T700 Engine Improvements	5.2	2.7		3.2	6.0	0.7	0.2					18.0
10-96	Armed Helo	22.0	18.2	17.9	81.7								139.8
17-00	Helicopter Integrated Mechanical Diagnostic System (IMDS)					21.3	19.6	24.6	23.9	22.8	21.8		134.1
TOTAL		256.1	46.4	71.1	137.1	56.8	20.3	24.8	23.9	22.8	21.8		681.1
<p>Note: Totals may not add due to rounding. * Indicates amounts less than 51K.</p>													

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Block I Upgrade (OSIP 4-91)

MODELS OF SYSTEMS AFFECTED: SH-60B TYPE MODIFICATION: Operational Enhancement

DESCRIPTION/JUSTIFICATION:
 This block retrofit is to upgrade the previously delivered aircraft to the latest production configuration. Improvements are in the areas of armament and avionics. The alternative to this retrofit would be multiple configurations or over half of the LAMPS MK III inventory in a less than current configuration. Lot 1-8 were retrofit aircraft. Lot IX was off the production line. There were 95 Helo's modified; there are 148 SH-60Bs in inventory. The SH-60B Block Upgrade 1 consists of the following mission enhancements: 1) Advanced Light Weight Torpedo - Integrating the capability to carry and launch the MK-50 Torpedo/Penguin Missile 2) 99 Channel - Integrating the capability to utilize 99 channel sonobuoys 3) Global Positioning System (GPS) - Integrating and installing the GPS components 4) AN/ARC-182- Radio set 5) Maintainability/Operability Items - Tail rotor cable guides, floatation upgrade, hoist control, tail rotor disconnect coupling, high speed. T shaft improvements and electronic support measures antenna upgrade 6) Survivability - Provides capability for missile jamming, detection and evasion and 7) Powertrain Upgrade - Modifies selected engine componenys to upgrade a T700-401 engine to a T700-401C engine. This requirement is required per ORD # SOR 12-18.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:
 All development milestone were completed prior to FY91.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Kit 1	10	6.9																					10	6.9	
Kit2	10	2.1	6	1.4																			16	3.5	
Kit 3	13	2.3																					13	2.3	
Kit 4	7	1.5																					7	1.5	
Kit 5	15	10.9																					15	10.9	
Kit 6	23	8.4																					23	8.4	
Kit 7	6	0.2																					6	0.2	
Kit 8	5	0.6																					5	0.6	
Kit A	40	18.5	6	3.2																			46	21.7	
Kit B	15	6.0																					15	6.0	
Kit C	29	8.7																					29	8.7	
Penguin	22	2.4																					22	2.4	
Engine	46	2.5																					46	2.5	
Antenna	484	1.9																					484	1.9	
M-60 Mission Kit	74	1.0	14	0.1																			88	1.1	
AN/ARR-84 Kit	45	0.2																					45	0.2	
Installation Kits N/R			11.3																					11.3	
Installation Equipment																									
ARC-182	77	3.2																					77	3.2	
ARR-84	91	13.0	6	1.1																			97	14.1	

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Block I Upgrade (OSIP 4-91)

MODELS OF SYSTEMS AFFECTED: SH-60B TYPE MODIFICATION: Operational Enhancement

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
ARN-146	85	1.4	6	0.1																			91	1.5
ALO-144 (VP)2	79	5.2																					79	5.2
ALE-39	79	1.4	6	0.2																			85	1.6
ARR-47	84	4.3	6	0.1																			90	4.4
AYK-14	84	9.4	6	0.2	1	0.1																	91	9.7
OA8967	84	0.4	6	0.1																			90	0.5
MK-50 Cables	66	0.1	12	0.1																			78	0.2
RIM		1.6																						1.6
Penguin		3.3																						3.3
Installation Equipment N/R																								
Engineering Change Orders																								
Data		4.3																						4.3
Training Equipment		0.2			10.1																			10.3
Support Equipment																								
ILS																								
Other Support		1.5		0.4		1.8		0.2																3.8
Interim Contractor Support																								
Installation Cost	56	19.8	15	8.2	22	12.5	2	1.5															95	42.0
Total Procurement		154.5		15.2		24.5		1.6																195.9

- Notes:
1. Totals may not add due to rounding
 2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: SH-60B MODIFICATION TITLE: Block I Upgrade (OSIP 04-91)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field and Plant Mod Teams

ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 18 Months

CONTRACT DATES: FY 1997: Mar-97 FY 1998: _____ FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1997: Sep-98 FY 1998: _____ FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (93) kits	56	19.8	15	8.2	22	12.5																		93	40.5
FY 1999 (2) kits							2	1.5																2	1.5
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	56	19.8	15	8.2	22	12.5	2	1.5																95	42.0

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	71	5	6	5	6	2																				
Out	56	6	4	4	6	6	5	2	4	2																

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										95
Out										95

Exhibit P-3a		Individual Modification																							
MODIFICATION TITLE:		HH-60H FLIR/HELLFIRE (48-92)																							
MODELS OF SYSTEMS AFFECTED:		HH-60H						TYPE MODIFICATION: <u>Operational Enhancement</u>																	
DESCRIPTION/JUSTIFICATION:																									
The Forward Looking Infrared (FLIR) Sensor and Hellfire weapons system, is being incorporated on the HH-60H aircraft. This is required to meet unfulfilled requirements for forward firing weapons and FLIR per ORD# Ser 377-88-94. This OSIP procures and install 24 FLIR/Hellfire "A" kits. This modification provides enhanced target detection, designation and defensive and survival capabilities. The current HH-60H inventory is 38; 24 active duty Navy aircraft are being modified.																									
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:																									
FINANCIAL PLAN: (TOA, \$ in Millions)																									
	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Provisions	24	4.1																					24	4.1	
Installation Kits N/R		2.0																							2.0
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data		0.4																							0.4
Training Equipment		0.1																							0.1
Support Equipment		0.1																							0.1
ILS		0.5																							0.5
Other Support		0.4																							0.4
Interim Contractor Support																									
Installation Cost	1	0.1			9	0.4	14	0.6															24	1.1	
Total Procurement		7.7				0.4		0.6																	8.7
Notes:																									
1. Totals may not add due to rounding																									
2. Asterisk indicates amount less than \$50K																									

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: HH-60H MODIFICATION TITLE: FLIR/Hellfire (OSIP 48-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contract Field Mod Team

ADMINISTRATIVE LEADTIME: N/A Months PRODUCTION LEADTIME: N/A Months

CONTRACT DATES: FY 1998: _____ FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (24) kits	1	0.1			9	0.4	14	0.6																24	1.1
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	1	0.1			9	0.4	14	0.6																24	1.1

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	1			3	6	6	6	2																	
Out	1			3	6	6	6	2																	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										24
Out										24

Exhibit P-3a		Individual Modification																						
MODIFICATION TITLE:		GPS MAR Compliance - Mission Data Loader (MDL) (OSIP 14-94)																						
MODELS OF SYSTEMS AFFECTED:		SH-60F/HH-60H										TYPE MODIFICATION: Operational Enhancement												
DESCRIPTION/JUSTIFICATION: The GPS integration into the SH-60F/H must meet the requirements of the "DoD Minimum Avionics Requirements (MAR) for the Global Positioning System Sole Means of Navigation" document. This change will add a Mission Data Loader (MDL) to the existing GPS suite, thereby providing the appropriate number of Waypoints required to achieve MAR compliance. The current inventory is 75 SH-60Fs and 38 HH-60Hs; this modification is being added to all systems.																								
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Installation of the basic GPS into the SH-60F was accomplished under ECP 3508R1-2. Installation of the basic GPS into the HH-60H was accomplished under AEL ECP 90-2. The preliminary design review (PDR) was completed November 1990 and the critical design review (CDR) was completed in April 1991. Developmental and operational testing have been completed. PMW-167 is procuring the MDL under common OSIP 71-88.																								
FINANCIAL PLAN: (TOA, \$ in Millions)																								
	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E																								
PROCUREMENT																								
Installation Kits																								
SH-60F KIT	24	0.2	27	0.1	27	0.1																	78	0.4
HH-60H KIT (Active)	6	*	18	0.1																			24	0.1
HH-60H KIT (Reserve)	18	0.1																					18	0.1
Installation Kits N/R		2.4																						2.4
Installation Equipment																								
Installation Equipment N/R																								
Engineering Change Orders																								
Data		0.2																						0.2
Training Equipment		0.2																						0.2
Support Equipment																								
ILS																								
Other Support																								
Interim Contractor Support																								
Installation Cost	14	0.3	34	0.3	45	0.4	27	0.2															120	1.2
Total Procurement		3.3		0.5		0.5		0.2																4.4

Notes:
 1. Totals may not add due to rounding
 2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: SH-60F/HH-60H MODIFICATION TITLE: GPS MAR Compliance (OSIP 14-94)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Navy Field Mod Teams

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 14 Months

CONTRACT DATES: FY 1998: Nov-97 FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: Jan-99 FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (120) kits	14	0.3	34	0.3	45	0.4	27	0.2																120	1.2
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	14	0.3	34	0.3	45	0.4	27	0.2																120	1.2

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	48		15	15	15		13	14																	
Out	44	4	15	15	15		13	14																	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										120
Out										120

Exhibit P-3a		Individual Modification																						
MODIFICATION TITLE:		<u>Forward Looking Infrared (FLIR) (OSIP 15-94)</u>																						
MODELS OF SYSTEMS AFFECTED:		<u>SH-60B</u>										TYPE MODIFICATION: <u>Operational Enhancement</u>												
DESCRIPTION/JUSTIFICATION: The FLIR mission kits consist of FLIR turrets, associated integration electronics, controlling software, required interface cables, and mounts. Linking the FLIR imagery to the ship will be accomplished through modifications to the unique SH-60B data link (ARQ-44). Retrofit kits to accomplish this are included herein. The FLIR contingency kit will provide a passive detection, classification and tracking capability of surface contacts. The current SH-60B inventory is 148; all are being modified. This requirement is dictated in ORD#323(1-86-94) Rev.1. Ten additional are kits required for: (4) lab requirements (2) testing requirements and (4) trainers.																								
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: FLIR is a non-developmental item that is not currently in the military inventory. Its design represents a composite of existing electro-optic components reconfigured in a manner to meet unique H-60 requirements. FOT&E is complete.																								
FINANCIAL PLAN: (TOA, \$ in Millions)																								
	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E																								
PROCUREMENT																								
Installation Kits																								
ECP-267	107	6.0	42	2.6	24	2.9	5	0.3															178	12.0
Installation Kits N/R																								
Installation Equipment																								
FLIR Mission Kit	14	20.0	4	5.4	7	8.2	14	20.5	21	26.9												60	80.9	
Installation Equipment N/R																								
Engineering Change Orders																								
Data						0.3																		0.3
Training Equipment						13.0		8.0		2.7														23.7
Support Equipment		4.8																						4.8
ILS						*																		*
Other Support		0.9		0.8		0.6																		2.2
Interim Contractor Support																								
Installation Cost																								
Total Procurement		31.6		8.9		25.1		28.8		29.5														123.9
Notes:																								
1. Totals may not add due to rounding																								
2. *=value less than \$50K.																								

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: Aircraft Survivability Equipment (ASE) (OSIP 26-95)

MODELS OF SYSTEMS AFFECTED: HH-60H TYPE MODIFICATION: Operational Safety

DESCRIPTION/JUSTIFICATION: The HH-60H ASE upgrade includes the following APR-39A(V)2 Radar Warning System, AAR-47 Missile Plume Detector, AVR-2 Laser Detector, and ALE-47 countermeasures dispenser. This equipment will be incorporated to meet the primary mission requirements as dictated in HH-60H OR#085-05-86. The HH-60H current inventory is 38. This change will upgrade all Active Navy and the Reserves HH-60Hs to the same configuration.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Installations of the ASE equipment was initiated under AEL ECP 89-03. DT was successfully completed in April 1992 and OT was completed in February 1993. The initial procurement of the ASE suites for the Reserve HH-60Hs was conducted in 1993 with NGRE funding.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RD&E																									
PROCUREMENT																									
Installation Kits																									
Active Duty Kits	22	2.2																					22	2.2	
Reserve Kits	16	0.1																					16	0.1	
Installation Kits N/R	4	2.8																					4	2.8	
Installation Equipment																									
APR-39(V)2 Active Duty	24	4.8																					24	4.8	
APR-39(V)2 Reserve	18	3.6																					18	3.6	
AVR-2A Active Duty	24	4.0																					24	4.0	
AVR-2A Reserve	18	2.0																					18	2.0	
AAR-47	24	1.7																					24	1.7	
ALE-47	24	1.1																					24	1.1	
Installation Equipment N/R																									
Engineering Change Orders																									
Data		0.1																						0.1	
Training Equipment		0.1						20.9																20.9	
Support Equipment		0.8																						0.8	
ILS		0.1																						0.1	
Other Support		0.6				0.5																		1.1	
Interim Contractor Support																									
Installation Cost			8	0.4	30	1.6																	38	1.9	
Total Procurement		23.7		0.4		2.1		20.9																47.0	

- Notes:
- Totals may not add due to rounding
 - A total of four (4) kits were procured and installed as part of validation/verification efforts under the install kits non-recurring line. One (1) reserve A/C install was performed with NGRE funds.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: HH-60H MODIFICATION TITLE: Aircraft Survivability Equipment (ASE) (OSIP 26-95)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Teams

ADMINISTRATIVE LEADTIME: N/A Months PRODUCTION LEADTIME: N/A Months

CONTRACT DATES: FY 1998: _____ FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (38) kits			8	0.4	30	1.6																		38	1.9
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL			8	0.4	30	1.6																		38	1.9

Installation Schedule

	FY 1997	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	& Prior	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	8	8	9	7	6																				
Out	8	8	8	8	6																				

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										38
Out										38

Exhibit P-3a Individual Modification

MODIFICATION TITLE: NVG HUD (OSIP 27-95)

MODELS OF SYSTEMS AFFECTED: HH-60H TYPE MODIFICATION: Operational Enhancement

DESCRIPTION/JUSTIFICATION: The HH-60H Night Vision Goggles Heads Up Display (NVG HUD) upgrade provides flight and navigation information to be displayed to the flight crew through the Night Vision Goggles. The existing systems require substantial cockpit viewing by the flight crew. This change provides the flight crew with a heads up display of flight and navigation information reducing cockpit viewing and enhances the pilot's response time in the hostile environment. This change will bring the Active Navy HH-60Hs to the same configuration as the Reserve HH-60Hs. This requirement is reflected in ORD# 085-05-86. The HH-60H current inventory is 38; 24 active Navy aircraft are being modified.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: NVG HUD is a joint service (Army/Navy) competition which was awarded to an AEL/CROSS SYSTEM/ELBIT Team. Installation of the NVG HUD upgrade was initiated under AVRADA Delivery Order 0079. The initial procurement of 18 NVG HUD suites for the Reserve HH-60H was conducted in 1992 with NGRE funding.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Active	24	1.5																						24	1.5
Reserve																									
Installation Kits N/R		0.8																							0.8
Installation Equipment																									
Active	24	0.5																						24	0.5
Reserve	18	0.4																						18	0.4
Installation Equipment N/R																									
Engineering Change Orders																									
Data		0.1																							0.1
Training Equipment																									
Support Equipment																									
ILS																									
Other Support																									
Interim Contractor Support																									
Installation Cost			2	0.1	22	0.7																		24	0.7
Total Procurement		3.3		0.1		0.7																			4.0

- Notes:
- Totals may not add due to rounding
 - Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: HH-60H MODIFICATION TITLE: NVG HUD (OSIP 27-95)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Teams

ADMINISTRATIVE LEADTIME: N/A Months PRODUCTION LEADTIME: N/A Months

CONTRACT DATES: FY 1998: _____ FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (24) kits			2	0.1	22	0.7																		24	0.7
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL			2	0.1	22	0.7																		24	0.7

Installation Schedule

	FY 1997	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	& Prior	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	
In	2	5	5	6	6																				
Out	2	5	5	6	6																				

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										24
Out										24

Exhibit P-3a		Individual Modification																							
MODIFICATION TITLE:		T700 Engine Improvement (OSIP 08-96)																							
MODELS OF SYSTEMS AFFECTED:		SH-60B, SH-60F, HH-60H										TYPE MODIFICATION: Operational Enhancement													
DESCRIPTION/JUSTIFICATION: The Navy H-60 helicopter engine improvement modifications include the following safety and reliability improvements; auto ignition, which activates a time delay relay enabling ignition during an overspeed event and subsequent re-light; tra droop improvement (TDI) which minimizes NR droop in hot/heavy gross weight environment and suitable contingency power making increased power available at high gross weight. The current SH-60B inventory is 148 for the SH-60Bs , 38 for HH-60Hs and 75 for SH-60F; are systems are being modified per ORD#s SOR-12-18, 015-05-84 and 085-05-86.																									
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The planned engine improvements are already developed and in production in Army Blackhawk helicopters. The Navy will conduct flight testing of the FY 1996 validation/verification period in order to verify the operation in the Naval Hawk application.																									
FINANCIAL PLAN: (TOA, \$ in Millions)																									
	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
ECP3930	51	0.5	41	0.4			85	0.6	106	1.2													283	2.8	
Installation Kits N/R		1.3																						1.3	
Installation Equipment																									
DECU s	122	2.6	82	1.6			170	2.2	220	3.4													594	9.8	
Installation Equipment N/R																									
Engineering Change Orders																									
Data		0.3		0.1																				0.3	
Training Equipment			14	0.4																			14	0.4	
Support Equipment				*																				*	
ILS		0.5																						0.5	
Other Support		0.1		0.2				0.1		0.2		0.1		0.1										0.8	
Interim Contractor Support																									
Installation Cost							44	0.3	130	1.2	103	0.6	20	0.1										297	2.1
Total Procurement		5.2		2.7				3.2		6.0		0.7		0.2										18.0	
Notes:																									
1. Totals may not add due to rounding																									
2. Asterisk indicates amount less than \$50K																									

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: SH-60B, SH-60F, HH-60H MODIFICATION TITLE: T700 Engine Improvements (OSIP 08-96)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Teams

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 1998: N/A FY 1999: Nov-98 FY 2000: Nov-99

DELIVERY DATE: FY 1998: N/A FY 1999: Nov-99 FY 2000: Nov-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL				
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$			
FY 1998 & PY (106) kits							44	0.3	62	0.5														106	0.8		
FY 1999 (85) kits									68	0.6	17	0.1													85	0.7	
FY 2000 (106) kits											86	0.5	20	0.1												106	0.6
FY 2001 () kits																											
FY 2002 () kits																											
FY 2003 () kits																											
FY 2004 () kits																											
FY 2005 () kits																											
To Complete () kits																											
TOTAL							44	0.3	130	1.2	103	0.6	20	0.1										297	2.1		

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In						10	17	17	31	32	33	34	28	26	25	24	20								
Out						10	17	17	31	32	33	34	28	26	25	24	20								

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										297
Out										297

Exhibit P-3a	Individual Modification																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
MODIFICATION TITLE:	<u>Armed Helo (OSIP 10-96)</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
MODELS OF SYSTEMS AFFECTED:	<u>SH-60B</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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DESCRIPTION/JUSTIFICATION: Procures weapons kits and incorporate provisions for a weapons capability into the SH-60B helicopter. Provisions include capability for supporting the Hellfire missile, crew served GAU-16A machine gun and FLIR nose mount. Modification required due to increasing ASUW role of the SH-60B in the littoral environment. This modification provides enhanced target detection, designation and defensive and survival capabilities. The current SH-60B inventory is 168; 87 aircraft are being modified. The program also procures 60 Hellfire mission systems as ancillary equipment. ORD #Ser 377-88-94 applies.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The weapons capability for the SH-60B and HH-60H will utilize all Non-Development Items (NDI) equipments. A contract for the rapid deployment capability consisting of (8) aircraft was awarded in June 1996, with installations commencing in December 1996.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
FINANCIAL PLAN: (TOA, \$ in Millions)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	<table border="1" style="width: 100%; border-collapse: collapse; font-size: 8px;"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Prior Years</th> <th colspan="2">FY 1997</th> <th colspan="2">FY 1998</th> <th colspan="2">FY 1999</th> <th colspan="2">FY 2000</th> <th colspan="2">FY 2001</th> <th colspan="2">FY 2002</th> <th colspan="2">FY 2003</th> <th colspan="2">FY 2004</th> <th colspan="2">FY 2005</th> <th colspan="2">To Complete</th> <th colspan="2">Total</th> </tr> <tr> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> </tr> </thead> <tbody> <tr> <td>RDT&E</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>PROCUREMENT</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td> Installation Kits</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td> Provisions</td> <td>2</td><td>0.6</td> <td>6</td><td>1.8</td> <td>15</td><td>6.8</td> <td>56</td><td>33.6</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>79</td><td>42.8</td> </tr> <tr> <td> Hellfire Kits</td> <td>2</td><td>0.6</td> <td>6</td><td>1.8</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>8</td><td>2.3</td> </tr> <tr> <td> Rapid Deployment</td> <td>8</td><td>0.8</td> <td></td><td>3.9</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>8</td><td>4.8</td> </tr> <tr> <td> Installation Kits N/R</td> <td></td><td>16.6</td> <td></td><td>5.2</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>21.8</td> </tr> <tr> <td> Installation Equipment</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td> Rapid Deployment</td> <td>8</td><td>1.2</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>8</td><td>1.2</td> </tr> <tr> <td> Hellfire Launcher/GAU-16A</td> <td>2</td><td>0.4</td> <td>2</td><td>0.4</td> <td>14</td><td>3.5</td> <td>34</td><td>7.1</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>52</td><td>11.4</td> </tr> <tr> <td> Installation Equipment N/R</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td> Engineering Change Orders</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td> Data</td> <td></td><td>0.1</td> <td></td><td>0.4</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>0.5</td> </tr> <tr> <td> Training Equipment</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>30.9</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>30.9</td> </tr> <tr> <td> Support Equipment</td> <td></td><td>0.2</td> <td></td><td>0.3</td> <td></td><td>0.5</td> <td></td><td>0.3</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1.3</td> </tr> <tr> <td> ILS</td> <td></td><td>0.5</td> <td></td><td>0.7</td> <td></td><td>0.1</td> <td></td><td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1.3</td> </tr> <tr> <td> Other Support</td> <td></td><td>0.9</td> <td></td><td>3.0</td> <td></td><td>7.0</td> <td></td><td>3.7</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>14.6</td> </tr> <tr> <td> Interim Contractor Support</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td> Installation Cost</td> <td></td><td></td> <td>10</td><td>0.7</td> <td></td><td></td> <td>77</td><td>6.1</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>87</td><td>6.8</td> </tr> <tr> <td>Total Procurement</td> <td></td><td>22.0</td> <td></td><td>18.2</td> <td></td><td>17.9</td> <td></td><td>81.7</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>139.8</td> </tr> </tbody> </table>		Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	RDT&E																										PROCUREMENT																										Installation Kits																										Provisions	2	0.6	6	1.8	15	6.8	56	33.6															79	42.8	Hellfire Kits	2	0.6	6	1.8																			8	2.3	Rapid Deployment	8	0.8		3.9																			8	4.8	Installation Kits N/R		16.6		5.2																				21.8	Installation Equipment																										Rapid Deployment	8	1.2																					8	1.2	Hellfire Launcher/GAU-16A	2	0.4	2	0.4	14	3.5	34	7.1															52	11.4	Installation Equipment N/R																										Engineering Change Orders																										Data		0.1		0.4																					0.5	Training Equipment								30.9																	30.9	Support Equipment		0.2		0.3		0.5		0.3																	1.3	ILS		0.5		0.7		0.1																			1.3	Other Support		0.9		3.0		7.0		3.7																	14.6	Interim Contractor Support																										Installation Cost			10	0.7			77	6.1															87	6.8	Total Procurement		22.0		18.2		17.9		81.7																139.8
	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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Installation Cost			10	0.7			77	6.1															87	6.8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
Total Procurement		22.0		18.2		17.9		81.7																139.8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: SH-60B MODIFICATION TITLE: Armed Helo (OSIP 10-96)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Teams

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME FY 1998: 9 / FY 1999: 7 Months

CONTRACT DATES: FY 1998: Jun-98 FY 1999: Oct-98 FY 2000: _____

DELIVERY DATE: FY 1998: Mar-99 FY 1999: Apr-99 FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (31) kits			10	0.7					21	1.7														31	2.4
FY 1999 (56) kits							56	4.4																56	4.4
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL			10	0.7			77	6.1																87	6.8

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	8					2	4	12	12	12	12	12	12	11											
Out	2	4	2	2		2	4	12	12	12	12	12	11												

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										87
Out										87

Exhibit P-3a		Individual Modification																							
MODIFICATION TITLE:		<u>HELICOPTER INTEGRATED MECHANICAL DIAGNOSTIC SYSTEM (IMDs) (OSIP 17-00)</u>																							
MODELS OF SYSTEMS AFFECTED:		<u>SH-60B, SH-60F, HH-60H, CH-60</u>										TYPE MODIFICATION: <u>Operational Enhancement/Safety</u>													
DESCRIPTION/JUSTIFICATION: IMD is a helicopter monitoring and diagnostics system that provides continuous onboard monitoring and diagnostics of engine health, gearbox, and drive train vibrations, oil debris and rotor track and balance.																									
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: IMD DT/OT installs starts 15 February 1999. IMD DT/OT schedule to be completed by June 1999. IMD LRIP plan July 1999. Installations begin October 1999, modifying the current inventory of SH-60B 148; SH-60F 75 and HH-60H 38.																									
FINANCIAL PLAN: (TOA, \$ in Millions)																									
	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits									3.9		18.0		19.1		21.7		20.6		19.5						102.8
Installation Kits N/R									3.5				3.6												7.1
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data									1.8																1.8
Training Equipment									2.2																2.2
Support Equipment									0.1																0.1
ILS																									
Other Support									9.8		1.6		2.0		2.2		2.2		2.3						20.0
Interim Contractor Support																									
Installation Cost																									
Total Procurement									21.3		19.6		24.6		23.9		22.8		21.8						134.1
Notes:																									
1. Totals may not add due to rounding																									
2. Asterisk indicates amount less than \$50K																									

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: SH-60B, SH-60F, HH-60H, CH-60 MODIFICATION TITLE: HELICOPTER INTEGRATED MECHANICAL DIAGNOSTIC SYSTEM (IMDS) (OSIP 17-00)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Teams

ADMINISTRATIVE LEADTIME: _____ Months PRODUCTION LEADTIME _____ Months

CONTRACT DATES: FY 2000: _____

DELIVERY DATE: FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1998 & PY () kits																										
FY 1999 () kits																										
FY 2000 () kits																										
FY 2001 () kits																										
FY 2002 () kits																										
FY 2003 () kits																										
FY 2004 () kits																										
FY 2005 () kits																										
To Complete () kits																										
TOTAL																										

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003					
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
In																											
Out																											

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-40, BUDGET ITEM JUSTIFICATION										DATE: February 1999			
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications								P-1 ITEM NOMENCLATURE H-1 Series Modifications					
Program Element for Code B Items:													
	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
QTY		A											-
COST (In Millions)	137.6	A	16.5	19.7	26.1	6.3	0.3	3.1	0.2	3.1	0.2	-	213.2
<p>This line item funds modifications to the AH-1W, HH-1N and UH-1N aircraft through FY 1996. There are 102 UH-1N's (84 active/18 reserve) and 30 active HH-1Ns for a total of 132. However, beginning in FY 1997 this line item funds only the HH-1N and UH-1N aircraft; therefore, no AH-1W information is provided herein. The UH-1N provides command and control and combat assault support under day/night and adverse weather conditions. Additional UH-1N missions include special operations support, controls/coordination/guidance of supporting fire and aeromedical evacuation. The overall goal of the modifications budgeted in FY 2000 is to eliminate safety hazards, remedy obsolescence and maintain significant mission capability until the planned retirement date of 2020.</p>													
OSIP No.	Description	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Complete	Total
15-92	UH-1 COMNAV Block Upgrade	50.4	6.5	8.9	5.6	2.2							73.5
16-92	UH-1 Night Vis Enhance	12.1	1.0										13.0
31-92	UH-1 NTIS	42.7	9.1	2.0	7.9								61.6
25-93	UH-1 Main Drive Shaft	32.5	*										32.5
15-98	AN/APR-39A(V)2			0.3	0.2	0.1							0.6
18-98	H-1N Safety Upgrades			5.4	8.8	4.1	0.3	0.1	0.2	0.1	0.2		19.1
21-98	Internal Rescue Hoist			3.1	3.7								6.8
-02	ASC-26 Upgrade							3.0		3.0			6.0
		137.6	16.5	19.7	26.1	6.3	0.3	3.1	0.2	3.1	0.2		213.2
RESERVE FUNDING INCLUDED IN TOTAL		1.5	1.5	1.7	2.3	0.5							
<p>Asterik indicates amounts less than \$50K Totals may not add due to rounding</p>													

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: COMNAV BLOCK UPGRADE (OSIP 15-92)

MODELS OF SYSTEMS AFFECTED: UH-1N TYPE MODIFICATION: UPGRADE

DESCRIPTION/JUSTIFICATION: Operational Requirements Document (ORD) AAS-51 states that the U.S. Marine Corps (USMC) UH-1N helicopters require self-contained navigation and jam-proof over-the-horizon (OTH) VHF and UHF communications in order to successfully execute all weather, day/night ship launched Marine Expeditionary Unit (Special Operations Capable) MEU (SOC), assault support missions and command and control missions. The UH-1N COMNAV Block Upgrade installed by AFC#275 via ECP PN76R1 consists of the AN/APN-217(V) Doppler NAV, AN/ARN-153 TACAN, and MAGR GPS which provide precise navigation and position information and the AN/ARC-210 radio suite with HAVEQUICK/SINGARS which provides secure voice communications. An AN/ARC-210 radio installed with a satellite communications antenna provides secure voice OTH communications between the assault forces and the task force commander. The AN/APN-217(V) Doppler, the MAGR GPS and the AN/ARC-210 radios are integrated through the cockpit display navigation unit (CDNU) via a MIL-STD-1553B Data Bus. Additionally, AFC#281 is required to relocate the aircraft searchlight, remove the AN/ARN-89 ADF system, install circuit breaker panel and center pedestal extensions. The CDNU Operational Flight Program (OFP), NVG Heads Up Display (HUD) and ICU-800 will also be improved.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The AN/APN-217(V) Doppler NAV, AN/ARN-153 TACAN, MAGR GPS system and Cockpit Display Navigation Unit (CDNU) have been individually qualified. The AN/ARC-210 radio Low Rate Initial Production Decision was approved 30 June 1992 and Full Rate Production Decision occurred in April 1994. COMNAV AFC 275 kit completed DT III in the second quarter FY 1995 and completed OT III in the second quarter FY 1996.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
AFC-275 ECP# PN76R1	71	9.4			17	2.5	13	1.9															101	13.8	
AFC-281 ECP# PN86	103	0.3																					103	0.3	
Installation Kits N/R	4	6.4		*																			4	6.4	
Installation Equipment		16.0				1.6		1.2																18.7	
Installation Equipment N/R		1.2		0.3		1.5																		3.0	
Engineering Change Orders																									
Data		0.3		0.1																				0.4	
Training Equipment	4	4.7		*																			4	4.7	
Support Equipment		0.3		0.1																				0.4	
ILS		0.9																						0.9	
Other Support		8.1		3.0		1.8		0.9		1.0														14.8	
Interim Contractor Support																									
Installation Cost	124	2.9	40	2.9	18	1.6	17	1.5	13	1.1													212	10.1	
Total Procurement		50.4		6.5		8.9		5.6		2.2														73.5	

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: UH-1N

MODIFICATION TITLE: COMNAV BLOCK UPGRADE (OSIP 15-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: CONTRACTOR FIELD MOD TEAM, AND ORGANIC MOD

ADMINISTRATIVE LEADTIME: 3 Months

PRODUCTION LEADTIME: 8 Months

CONTRACT DATES: FY 1998: Jan-98 FY 1999: Jan-99 FY 2000: _____

DELIVERY DATE: FY 1998: Sep-98 FY 1999: Sep-99 FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (199) kits	124	2.9	40	2.9	18	1.6	17	1.5																199	8.9
FY 1999 (13) kits									13	1.1														13	1.1
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	124	2.9	40	2.9	18	1.6	17	1.5	13	1.1													212	10.1	

Note: Includes 4 NRE & 4 Trainer Kits.

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	164	5	5	5	3	5	4	4	4	3	6	4													
Out	152	9	8	5	5	3	5	4	4	4	3	6	4												

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										212
Out										212

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: UH-1N NAVIGATIONAL THERMAL IMAGING SYSTM (NTIS) (OSIP 31-92)

MODELS OF SYSTEMS AFFECTED: UH-1N TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: Operational Requirements Document (ORD) AAS-51 states that the UH-1N requires a Navigational Thermal Imaging System (NTIS) to provide the U.S. Marine Corps with a night/day warfighting capability in the NOE/smoke/dust/haze environment. This capability reduces the safety risk by allowing the aircrew to see and avoid flight obstructions and locate targets that might not be visible with the naked eye or night vision goggles. The AN/AAQ-22A is a low cost, stabilized system which provides the required capability in the form of high quality real time imagery displayed into the UH-1N aircraft cockpit. The NTIS System is comprised of 5 components; Turret FLIR Unit (TFU), Central Electronic Unit (CEU), Hand Control Unit (HCU), Thermal Image Recorder (TIR), and the Video Display Unit (VDU). The NTIS is installed only in the UH-1N aircraft by AFC 275. The system also includes a Laser Range Finder (LRF) to determine the range to landmarks, targets, and tactical points of interest. Beginning FY97, the NTIS will be upgraded from 1st generation to 3rd generation Forward Looking Infrared (FLIR) technology. This COTS modification to the current NTIS configuration will consist of a 3-5 micron focal plane array detector, an eye safe LRF and new optics incorporating three fields of view. The commercial name of this modification is STAR SAFIRE LRF. Additionally, the NTIS will be upgraded with a new Thermal Imaging Recorder (TIR) and mount, replacing the obsolete and unsupportable Panasonic and JVC recorders

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The NTIS is a commercial off-the-shelf (COTS) item. MIL-STD-810C testing is complete. DT-III testing was completed in the fourth quarter 1994 and FOT&E was completed in the second quarter FY 1996. Additional testing occurred during fourth quarter 1998 for the NTIS upgrade.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
AFC 278 ECP EJH HO 30006	105	2.6																					105	2.6	
AFC-334 TIR ECP#H-1-CP9-97R-1			105	0.1																			105	0.1	
Installation Kits N/R		3.2				0.3																		3.5	
Installation Equipment																									
NTIS System (GFE)	84	29.7																					84	29.7	
TIR (GFE)			107	1.0																			107	1.0	
W-6 Cable							104	0.2															104	0.2	
NTIS Upgrade			20	6.9	2	0.7	20	6.8															42	14.4	
Installation Equipment N/R		0.4		0.2																				0.6	
Engineering Change Orders						0.1																		0.1	
Data		0.2		0.1		0.1		0.1																0.5	
Training Equipment	2	0.1		0.4		0.1		0.3															2	0.8	
Support Equipment		1.1																						1.1	
ILS		0.1				0.4		0.3																0.7	
Other Support		2.4		0.3		0.4		0.3																3.4	
Interim Contractor Support																									
Installation Cost	102	2.9	5	0.2																			107	3.1	
Total Procurement		42.7		9.1		2.0		7.9																61.6	

Notes:

1. Totals may not add due to rounding
2. No installation funding required after FY 1997 - NTIS upgrade will be performed at manufacturer as MOD of GFE
3. No installation funding required after FY 1997- AFC 334 TIR will be incorporated at organizational Level

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: AN/APR-39A(V) 2 WARNING RECEIVER SYSTEM (OSIP 15-98)

MODELS OF SYSTEMS AFFECTED: UH-1N TYPE MODIFICATION: SURVIVABILITY

DESCRIPTION/JUSTIFICATION: Operational Requirements Document (ORD) AAS-51 states the requirement for a UH-1N Radar Warning Receiver (RWR). The APR-39A(V)2 is a low-cost, light weight programmable RWR which provides warning of radar guided Surface-to-Air Missiles and AAA, as well as Air-to-Air threats to low/slow flying aircraft. Additionally, the RWR will serve as the Electronic Warfare (EW) data-bus controller and provides a centralized control and display for other components in the EW suite. The AN/APR-39A(V)2 system consists of five antennas, a control indicator, display unit receivers, and a processor. All equipment is installed into the UH-1Ns by AFC 240 part II via ECP # H1-PN72R1.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: All DT and OT testing is complete. AFC 240 Part II kits were procured under OSIP 15-90, and are in storage awaiting delivery of AN/APR-39A(V)2, are scheduled for 2nd quarter of FY 1999. FY 1998 funding was required for TD verification support, data, and field activity support.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Installation Kits N/R																									
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data							0.1																		0.1
Training Equipment																									
Support Equipment																									
ILS																									
Other Support							0.1		*																0.1
Interim Contractor Support																									
Installation Cost								72	0.2	34	0.1													106	0.3
Total Procurement							0.3		0.2		0.1														0.6

- Notes:
1. Totals may not add due to rounding
 2. Installations include 4 trainers.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: UH-1N

MODIFICATION TITLE: AN/APR-39A(V)2 WARNING RECEIVER SYSTEM (OSIP 15-98)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: CONTRACTOR FIELD MOD TEAM

ADMINISTRATIVE LEADTIME: N/A Months

PRODUCTION LEADTIME: N/A Months

CONTRACT DATES: FY 1998: N/A

FY 1999: N/A

FY 2000: N/A

DELIVERY DATE: FY 1998: N/A

FY 1999: N/A

FY 2000: N/A

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (106) kits					72	0.2	34	0.1																106	0.3
FY 2001 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL					72	0.2	34	0.1																106	0.3

Note:

- 1. Installations include 4 trainers.

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In						24	24	24	24	10															
Out						24	24	24	24	10															

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										106
Out										106

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: H-1N SAFETY UPGRADES (18-98)

MODELS OF SYSTEMS AFFECTED: HH-1N/UH-1N TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: Operational Requirements Document (ORD) AAS-51 requires that the following safety shortfalls be corrected. The UH/HH-1N helicopter fleet were designed in the 1960s, introduced in the 1970s and are projected to remain in the Department of Navy inventory until FY-2020. This program is designed to address safety issues, such as mishap casual factors associated with maintaining an older type model series aircraft prior to completion of the planned UH-1Y (4BN) upgrade. Specifically, this safety upgrade program replaces the Tail Drive System (TDS) and increases available T-400 engine power to the main transmission during in extremis situations. The existing TDS is subject to failure resulting in complete loss of tail rotor thrust. Since 1991, 44 malfunctions or failure have been reported on current TDS components. In the same time period, two Class A mishaps occurred as result of catastrophic failure of the hanger bearing assemblies in flight. These mishaps resulted in two deaths, major and minor injuries in seven others and the destruction of two aircraft. NAWC Lakehurst projects one Class A mishap to occur every two to three years at the current flight usage rates in a safety assessment report published on 3 June 1996. The T-400 Emergency power modification will install an improved torque sensor, a torque monitoring system and adjust the aircraft torque limiter system. Included in this OSIP is the requirement to correct the safety deficiencies of the M240 machine gun. Additionally, the main rotor RPM Limiter detection box and overspeed aural alert unit (AAU) will be modified. This will allow the use of maximum available engine power to the main transmission in an extremis situation.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: These upgrades are proprietary, non-developmental items used in other BHTI produced military and FAA certified commercial helicopters. Prototype installation and flight testing began in July 1998 at NAS Patuxent River, MD.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
ECP # BHTI-1710 (TDS)					9	0.6	85	5.4	36	2.3													130	8.3	
ECP# BHTI 1741 Emg Power					39	0.9	63	1.8															102	2.7	
ECP# NAWCWD 97GG023R2 M240					210	0.1																	210	0.1	
Installation Kits N/R						1.3																		1.3	
Installation Equipment N/R																									
Engineering Change Orders						*																		*	
Data						0.9		0.2																1.0	
Training Equipment					5	0.3			0.2	0.1													5	0.6	
Support Equipment						0.1																		0.1	
ILS						0.5		0.1	0.1															0.6	
Other Support						0.9		0.8	0.4	*	0.1		0.2		0.1		0.2							2.7	
Interim Contractor Support																									
Installation Cost							48	0.5	153	1.1	36	0.1											237	1.7	
Total Procurement						5.4		8.8		4.1		0.3		0.1		0.2		0.1		0.2				19.1	

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: HH-1N/UH-1N MODIFICATION TITLE: H-1N SAFETY UPGRADES (OSIP 18-98)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: CONTRACTOR FIELD TEAM AND ORGANIC MOD TEAM

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 6 Months

CONTRACT DATES: FY 1998: Apr-99 FY 1999: Apr-99 FY 2000: Nov-99

DELIVERY DATE: FY 1998: Oct-99 FY 1999: Oct-99 FY 2000: Jul-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 1998 & PY (53) kits							48	0.5	5	0.1													53	0.6
FY 1999 (148) kits									148	1.0													148	1.0
FY 2000 (36) kits											36	0.1											36	0.1
FY 2001 () kits																								
FY 2002 () kits																								
FY 2003 () kits																								
FY 2004 () kits																								
FY 2005 () kits																								
To Complete () kits																								
TOTAL							48	0.5	153	1.1	36	0.1											237	1.7

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In						4	18	26	33	40	41	39	24	9	3										
Out						3	16	22	36	42	42	40	23	9	4										

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										237
Out										237

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: H-1 INTERNAL RESCUE HOIST (21-98)

MODELS OF SYSTEMS AFFECTED: HH-1N/UH-1N TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: Operational Requirements Document (ORD) AAS-51 states the requirement for an Internal Rescue Hoist. The current HH/UH-1N hoist was designed in the 1960s and introduced in the 1970s. The procurement of a new HH/UH-1N rescue hoist will be GFE to the UH-1Y (4BN) upgrade and is projected to remain in the inventory until FY2020. There have been 16 hoist related failure/incidents in the past 13 years. NAWC Lakehurst safety assessment of the HH-/UH-1N internal rescue hoist determined that we can expect at least one hoist failure per year, with possible catastrophic results, and strongly recommends that a modern, reliable, internal rescue hoist be procured. A new internal rescue hoist will provide a state-of-the-art rescue hoist that will increase search and rescue effectiveness well into the next decade.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: This upgrade acquires a form, fit and function interchangeable of the existing internal rescue hoist as a non-development item.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Installation Kits																									
Installation Kits N/R							0.1																		0.1
Installation Equipment																									
Installation Equipment					21	2.1	34	3.5																55	5.6
Installation Equipment N/R																									
Engineering Change Orders																									
Data							0.2																		0.2
Training Equipment					1	0.3																		1	0.3
Support Equipment							*																		0.0
ILS							0.1																		0.1
Other Support							0.3		0.2																0.5
Interim Contractor Support																									
Installation Cost																									
Total Procurement							3.1		3.7															56	6.8

Notes:

1. Totals may not add due to rounding
2. No Installation funding required. Rescue Hoist will be incorporated at the organizational level.

CLASSIFICATION: **UNCLASSIFIED**

BUDGET ITEM JUSTIFICATION SHEET P-40								DATE: February 1998																																																																																																																																			
APPROPRIATION/BUDGET ACTIVITY <i>Aircraft Procurement, Navy/APN-5 Aircraft Modifications</i>								P-1 ITEM NOMENCLATURE <i>H-3 Series Modifications</i>																																																																																																																																			
Program Element for Code B Items:								Other Related Program Elements																																																																																																																																			
	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total																																																																																																																														
QUANTITY																																																																																																																																											
COST (In Millions)	281.2		1.5	3.2	*	*	*	5.2	3.2	3.3	3.3	8.2	309.3																																																																																																																														
<p>This line item funds modifications to H-3 aircraft. The H-3 is a twin-engine, single main rotor helicopter utilized in anti-submarine warfare, utility, and search and rescue missions. The overall goal of the modifications budgeted in FY 2000/2001 is to replace obsolete systems and equipment to enhance mission performance and to ensure supportability until the planned retirement of the H-3 aircraft in 2010. The specific modifications budgeted and programmed are:</p> <p style="text-align: center;">(TOA, \$ in Millions)</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>OSIP No.</th> <th>Description</th> <th>Prior Years</th> <th>FY 1997</th> <th>FY 1998</th> <th>FY 1999</th> <th>FY 2000</th> <th>FY 2001</th> <th>FY 2002</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> <th>To Complete</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>46-83</td> <td>SH-3H/G/D SLEP (BLOCK UPGRADE)</td> <td>276.6</td> <td>1.1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>277.7</td> </tr> <tr> <td>14-93</td> <td>UH-3H GPS</td> <td>3.8</td> <td>0.3</td> <td>0.7</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>4.8</td> </tr> <tr> <td>36-95</td> <td>EXECUTIVE TRANSPORT CONVERSION</td> <td>0.8</td> <td>0.1</td> <td>2.6</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>8.2</td> <td>11.7</td> </tr> <tr> <td>03-99</td> <td>AN/ASN-162 C/AHRS</td> <td></td> <td></td> <td></td> <td>*</td> <td>*</td> <td>*</td> <td>3.3</td> <td>3.2</td> <td></td> <td></td> <td></td> <td>6.6</td> </tr> <tr> <td>-02</td> <td>COMM/NAV UPGRADE</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1.9</td> <td></td> <td></td> <td></td> <td></td> <td>1.9</td> </tr> <tr> <td>-04</td> <td>COCKPIT MODIFICATIONS</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>3.3</td> <td>3.3</td> <td></td> <td>6.6</td> </tr> <tr> <td>TOTAL</td> <td></td> <td>281.2</td> <td>1.5</td> <td>3.3</td> <td>*</td> <td>*</td> <td>*</td> <td>5.2</td> <td>3.2</td> <td>3.3</td> <td>3.3</td> <td>8.2</td> <td>309.3</td> </tr> <tr> <td>Funding for Reserve Forces</td> <td></td> <td>1.4</td> <td>0.2</td> <td>0.1</td> <td></td> <td>*</td> <td>*</td> <td>0.1</td> <td>0.1</td> <td>0.1</td> <td>0.1</td> <td></td> <td>2.2</td> </tr> </tbody> </table> <p>* Indicates funding less than 0.051 Million.</p>														OSIP No.	Description	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total	46-83	SH-3H/G/D SLEP (BLOCK UPGRADE)	276.6	1.1										277.7	14-93	UH-3H GPS	3.8	0.3	0.7									4.8	36-95	EXECUTIVE TRANSPORT CONVERSION	0.8	0.1	2.6								8.2	11.7	03-99	AN/ASN-162 C/AHRS				*	*	*	3.3	3.2				6.6	-02	COMM/NAV UPGRADE							1.9					1.9	-04	COCKPIT MODIFICATIONS									3.3	3.3		6.6	TOTAL		281.2	1.5	3.3	*	*	*	5.2	3.2	3.3	3.3	8.2	309.3	Funding for Reserve Forces		1.4	0.2	0.1		*	*	0.1	0.1	0.1	0.1		2.2
OSIP No.	Description	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total																																																																																																																														
46-83	SH-3H/G/D SLEP (BLOCK UPGRADE)	276.6	1.1										277.7																																																																																																																														
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Funding for Reserve Forces		1.4	0.2	0.1		*	*	0.1	0.1	0.1	0.1		2.2																																																																																																																														

Exhibit P-3a	Individual Modification											
MODIFICATION TITLE: <u>SH-3H SERVICE LIFE EXTENSION PROGRAM (OSIP 46-83)</u>												
MODELS OF SYSTEMS AFFECTED: <u>SH/UH-3H</u>	TYPE MODIFICATION : <u>Reliability</u>											
<p>DESCRIPTION/JUSTIFICATION: The SH-3 Service Life Extension Program (SLEP) will extend the service life of the SH/UH-3H to the year 2010 (17,500 flight hours) in order to provide required aircraft carrier helo and station search and rescue capabilities. To provide the required station search and rescue capability, efforts are underway to perform specific airframe fatigue testing and T-58-GE-402 engine testing to extend the UH-3H Airframe Service Life limit to 17,500 hours and the year 2010 to meet the operational requirement.</p> <p>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Contractor/Government testing has been completed at NAWCAD Patuxent River for specific airframe fatigue and T-58-GE-402 engine testing.</p>												
FINANCIAL PLAN: (TOA, \$ in Millions)												
	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E												
PROCUREMENT												
Installation Kits												
Kit	2,503	112.3										2,503 112.3
Installation Kits N/R		33.3										33.3
Installation Equipment												
Equip	1,035	41.6										1,035 41.6
Installation Equipment N/R		0.6										0.6
Engineering Change Orders												
Data		5.6		0.3								5.9
Training Equipment		0.5										0.5
Support Equipment		4.2										4.2
ILS		7.8										7.8
Other Support		16.7		0.1								16.8
Interim Contractor Support												
Installation Cost	1,044	53.9	50	0.7								1,094 54.6
Total Procurement		276.6		1.1								277.7

Notes:

- Totals may not add due to rounding
- Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: SH/UH-3H MODIFICATION TITLE: SH-3 SLEP (Block Upgrade) (OSIP 46-83)

INSTALLATION INFORMATION: DEPOT-LEVEL CONVERSION/UPGRADE OF SH-3D/G/H WITH SERVICE LIFE EXTENSION PROGRAM

METHOD OF IMPLEMENTATION: DRIVE-IN MODIFICATION/CONCURRENT WITH SDLM/DEPOT FIELD MOD TEAM/CONTRACTOR FIELD MOD TEAM

ADMINISTRATIVE LEADTIME: _____ Months PRODUCTION LEADTIME: _____ Months

CONTRACT DATES: FY 1998: _____ FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (1094) kits	1,044	53.9	50	0.7																				1,094	54.6
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	1,044	53.9	50	0.7																				1,094	54.6

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	1094																								
Out	1094																								

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										1094
Out										1094

Exhibit P-3a Individual Modification

MODIFICATION TITLE: UH-3H GPS (OSIP 14-93)

MODELS OF SYSTEMS AFFECTED: UH-3H TYPE MODIFICATION: Reliability

DESCRIPTION/JUSTIFICATION: Installation of the Miniaturized Airborne GPS Receiver (MAGR) system in the UH-3H Aircraft will provide independent 24 hour all weather Navigation coverage. Integrating the MAGR into the H-3 AN/ASN-1 Tactical Navigational Computer (TACNAV) allows for back-up Navigational Coverage and Doppler aiding. This will greatly enhance the UH-3H navigation and mission capabilities. This OSIP was originated as an Engineering Change Proposal (ECP) modification prior to initiation of DOD 5000. As such, there was no separate Mission Needs Statement (MNS) or Operational Requirements Document (ORD) needed or generated. Of the 64 aircraft in the H-3 inventory, 52 will receive the upgrade immediately, 7 SH-3H's and 5 VH-3A's will not receive the upgrade

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Developmental (DT III) testing and Operational (OT III) testing, funded by PMW-187 under Common Avionics GPS OSIP 71-88, are complete. There are three major kits provided under this OSIP: Airframe modification kit (provisions only) and two AN/ASN-123 TACNAV modification kits (Hardware/Software). The Global Positioning System User Equipment (i.e. MAGR, Mission Data Loader (MDL), antennas, mounts) will be furnished as GFE by SPAWARSSYSCOM PMW/PMA-187 and is funded under OSIP 71-88

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
MAGR Kit	60	0.9																						60	0.9
Installation Kits N/R		0.7																							0.7
Installation Equipment																									
TACNAV Equip	60	0.9																						60	0.9
Installation Equipment N/R																									
Engineering Change Orders																									
Data		0.1																							0.1
Training Equipment		0.5																							0.5
Support Equipment																									
ILS		*																							0.0
Interim Contractor Support		0.1																							0.1
Installation Cost																									
Installation Cost	61	0.6	19	0.3	32	0.7																		112	1.5
Total Procurement		3.8		0.3		0.7																			4.8

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. Discrepancy of 8 installs is due to incompatibility of previously purchased units that will not be installed.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: UH-3H MODIFICATION TITLE: UH-3H GLOBAL POSITIONING SYSTEM (OSIP 14-93)

INSTALLATION INFORMATION: **DEPOT LEVEL**

METHOD OF IMPLEMENTATION: **CONTRACTOR FIELD MODIFICATION TEAM**

ADMINISTRATIVE LEADTIME: _____ Months PRODUCTION LEADTIME: _____ Months

CONTRACT DATES: FY 1998: _____ FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (112) kits	61	0.6	19	0.2	32	0.7																		112	1.5
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	61	0.6	19	0.2	32	0.7																		112	1.5

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	80	6	12	12	2																					
Out	77	9	12	12	2																					

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										112
Out										112

Exhibit P-3a	Individual Modification																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
MODIFICATION TITLE: <u>UH-3H EXECUTIVE TRANSPORT CONVERSION (OSIP 36-95)</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
MODELS OF SYSTEMS AFFECTED: <u>UH-3H</u>	TYPE MODIFICATION : <u>Reliability</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
<p>DESCRIPTION/JUSTIFICATION: VH-3A aircraft are currently used to provide CINCLANTFLT with Executive Transport mission support. However, these aircraft will reach their airframe service life limit in FY 1998 while critical systems and components are becoming increasingly unsupportable due to obsolescence and uniqueness compared to the rest of the H-3 Fleet. This program will convert four (4) logistically supportable UH-3H aircraft for CINCLANTFLT Executive Transport missions. The modification includes addition of an Auxiliary Power Unit, Environmental Control System, and interior passenger accommodations. OPNAV conveyed this requirement in March 1995 via ORD # 404-88-95.</p> <p>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Design and installation of components and systems common to other U.S. Government helicopters will be utilized to the maximum extent possible to minimize cost and the amount of testing and qualification required. Critical Design Review (CDR) was held 1st QTR FY 98. No FOT&E is required for this program.</p>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
FINANCIAL PLAN: (TOA, \$ in Millions)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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<td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>PROCUREMENT</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td> Installation Kits</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td> AFC Kit</td> 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Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: UH-3H MODIFICATION TITLE: UH-3H EXECUTIVE TRANSPORT UPGRADE (OSIP 36-95)

INSTALLATION INFORMATION: DEPOT LEVEL UPGRADE

METHOD OF IMPLEMENTATION: DEPOT CONTRACTOR DRIVE-IN MODIFICATION

ADMINISTRATIVE LEADTIME: _____ Months PRODUCTION LEADTIME: _____ Months

CONTRACT DATES: FY 1998: _____ FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete (3) kits																						3	2.0	3	2.0
TOTAL																						3	2.0	3	2.0

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In																									
Out																									

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In									3	3
Out									3	3

Exhibit P-3a	Individual Modification																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
MODIFICATION TITLE: <u>AN/ASN-162 COMPASS/ ATTITUDE HEADING REFERENCE SYSTEM (OSIP 03-99)</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
MODELS OF SYSTEMS AFFECTED: <u>UH-3H</u>	TYPE MODIFICATION : <u>Reliability</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
DESCRIPTION/JUSTIFICATION: The C/AHRS will replace the unsupportable A24G-39 Attitude Heading Reference System (AHRS) and 1080Y Vertical Gyro. C/AHRS provides improved state-of-the-art navigation capability and coupled with GPS serves as a back-up navigational aid to the GPS system. Upgrade consists of the AN/ASN-162 C/AHRS at installation equipment and an airframe chage kit (AFC). No ECP has been developed as yet. All U.S. Navy active and reserve forces UH-3H aircraft will receive this upgrade. An ORD is still in the development/review cycle at OPNAV.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The new AN/ASN-162 C/AHRS will be in production FY98-02. Only Integration Testing will be performed.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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Equipment																										AHRS Equip													25	2.4		27	2.8							52	5.2	Installation Equipment N/R																										Engineering Change Orders																										Data														0.1											0.1	Training Equipment														0.1											0.1	Support Equipment														0.1											0.1	ILS														0.1											0.1	Other Support														0.2											0.2	Interim Contractor Support																										Installation Cost													25	0.1		27	0.2							52	0.3	Total Procurement								*		*		*		3.3			3.3								6.6
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Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: UH-3H MODIFICATION TITLE: AN/ASN-162 COMPASS/ATTITUDE HEADING REFERENCE SYSTEM (OSIP 03-99)

INSTALLATION INFORMATION: DEPOT LEVEL

METHOD OF IMPLEMENTATION: CONTRACTOR FIELD MODIFICATION TEAM

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 6 Months

CONTRACT DATES: FY 2002: Nov-01 FY 2003: Oct-02 FY 2004: _____

DELIVERY DATE: FY 2002: May-02 FY 2003: Apr-03 FY 2004: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 (25) kits													25	0.1										25	0.1
FY 2003 (27) kits															27	0.2								27	0.2
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL													25	0.1	27	0.2								52	0.3

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In																	10	15	9	9	9	9	9	9	
Out																	10	15	9	9	9	9	9	9	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										52
Out										52

CLASSIFICATION:

UNCLASSIFIED

BUDGET ITEM JUSTIFICATION SHEET P-40										DATE: February 1999			
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications								P-1 ITEM NOMENCLATURE EP-3 Series Modifications					
Program Element for Code B Items:								Other Related Program Elements					
	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
QUANTITY													
COST (In Millions)	48.8		35.9	5.5	7.4	27.4	26.1	27.8	34.6	35.0	36.9	200.1	485.7
<p>This line item funds modifications to the EP-3E aircraft. The EP-3E is a land based, long range aircraft, with electronic intercept devices for detection and tracking of enemy RADARs and radios. The overall goal of the modifications budgeted in FY2000 is to improve operational capability and aircrew productivity by expanding the ESM frequency coverage, applying state-of-the-art signal exploitation/processing/display techniques, expanding direction finding (DF) frequency coverage, and expanding special signal processing capability.</p> <p>Research and Development is funded with National Security Agency (NSA) Defense Cryptologic Program (DCP) funds and ASDC4I Defense Airborne Reconnaissance Program (DARP). DCP R&D funds the integration of Non-Developmental Items (NDI) under the Navy's Airborne Sensor System Improvement line. The NSA line for Navy Airborne Sensor System improvement funds sensor improvements with application to the EP-3E. DCP R&D PE: 0305885G refers. DARP R&D funds are responsible for the development and acquisition of EP-3E sensors, data links, data relays, and ground stations to achieve and maintain interoperability with Defense-wide airborne reconnaissance assets. Active PAA inventory is 12. There are 12 aircraft in the EP-3E inventory. The EP-3E has an average service life of 29.5 years and the first EP-3E will reach end of service in 2007.</p>													
OSIP No.	Description	Prior Years	FY 1997	FY 1998	FY 1999	(TOA, \$ in Millions) FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
14-95	EP-3 Sensor Improvement	46.4	34.7	4.8	4.7	27.4	0.5						118.5
02-96	Common Impr. (AN/ARC-187)	2.5	1.2	0.7									4.3
17-99	EP-3 GPS Upgrade				2.8								2.8
01-01	JSAF						25.6	27.8	34.6	35.0	36.9	200.1	360.1
TOTAL		48.8	35.9	5.5	7.4	27.4	26.1	27.8	34.6	35.0	36.9	200.1	485.7
Note: Totals may not add due to rounding.													

CLASSIFICATION:

DD Form 2454, JUN 86

UNCLASSIFIED

MODIFICATION TITLE: EP-3 Sensor System Improvement (OSIP 14-95)

MODELS OF SYSTEM AFFECTED: EP-3E

TYPE MODIFICATION: Operational Improvement / Modernization

DESCRIPTION/JUSTIFICATION:

This Sensor System Improvement Program (SSIP) responds directly to Operational Requirement (OR) #057-095-87. The program procures, integrates, and installs new capabilities into the EP-3 Electronic Warfare Support Measures (ESM) weapon system to cope with the increasingly complex and dense threat environment. The required improvements in productivity will be achieved by applying state-of-the-art signal exploitation/processing/display technique, and expanding Program signal processing capability. Tactical communications connectivity improvements include TRE Related Applications (TRAP), Tactical Digital Information Exchange System-B (TADIXS-B), Tactical Digital Information Link-A and -J (TADIL-A and -J), Tactical Information Broadcast Services (TIBS), Tactical Reconnaissance Information Exchange System (TRIXS), USN/USAF Advisory Support Network (ASN) Intelnet, DAMA-capable radios, and an upgrade to the OE-320 antenna suite. Integration and testing in the EP-3 Integrated Test Facility (ITF) prior to installation in the first production aircraft will ensure integrated system functional integrity. The Sensor System Improvement Program will provide the systems engineering required to modify hardware and software essential for timely situational analysis and reporting to the fleet tactical commands. LESPA requirement includes NRE for qualifying LESPA parachutes in both EP-3E and Special Project Aircraft. Procurement of parachutes was limited to the EP-3E requirement.

Operational Requirements Document (ORD) 057-095-87 and CAF-002-88 apply. This program responds to the VQ Fleet requirements to restore the force level to the Primary Aircraft Authorization (PAA) of twelve aircraft following the Class A mishap of September 1997. In FY 2000 SSIP will convert a preserved P-3C to an EP-3E configuration.

This OSIP addresses 12 aircraft. Current EP-3E service life extends through FY2007.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Initial testing at the Integrated Test Facility (ITF) was completed in the 2nd quarter of FY95. Based on this testing and an early operational assessment by COMOPTEVFOR, PEO(A) approved the production procurement of the first two system installs of SSIP Phase I. Production approval was based on follow-on qualification testing at the ITF and a COMOPTEVFOR operational assessment completed in the 2nd quarter FY96. Combined DT/FOT&E began the 4th quarter FY-98 with fleet introduction also occurring in the 4th quarter of FY98.

MODIFICATION TITLE: EP-3 Sensor System Improvement (OSIP 14-95)

MODELS OF SYSTEM AFFECTED: EP-3E

TYPE MODIFICATION: Operational Improvement / Modernization

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
SSIP	6	3.2	6	2.2																			12	5.4	
Replacement A/C									1	6.8													1	6.8	
LESPA			12	1.1																			12	1.1	
OE-320							6	.1	6	.1													12	.3	
TADIL-J/DAMA									12	1.2													12	1.2	
Installation Kits N/R		2.0		.3				.8		.8														3.9	
Installation Equipment																									
Storyteller	6	7.0	4	4.1																			10	11.1	
Story Book	6	8.9	4	5.4																			10	14.3	
Story Classic	6	7.1	4	4.6																			10	11.7	
IP-1159 Replacement	6	3.3	4	1.7																			10	5.0	
LESPA			12	1.0																			12	1.0	
Auto Signal Recognition							12	.5															12	.5	
OE-320 Upgrade							6	.9	6	.9													12	1.8	
TADIL-J/DAMA									12	5.6													12	5.6	
HBP Equipment								1.2																1.2	
Installation Equipment N/R																									
Engineering Change Orders																									
Data		3.3		1.0		.7		.7		1.7														7.4	
Training Equipment		.8		.2						.4														1.3	
Support Equipment		.6		.1						.1														.8	
ILS		3.2		1.7				.3		.3														5.5	
Other Support		5.4		1.9		4.1				2.5														14.0	
Interim Contractor Support																									
Installation Cost	2	1.6	10	9.4			18	.2	7	7.1	12	.5											49	18.8	
TOTAL PROCUREMENT	30	46.4	46	34.7		4.8	24	4.7	37	27.4		.5											137	118.5	

Notes:

1. Totals do not add due to rounding
2. Asterisk indicates amount less than 51K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: EP-3E MODIFICATION TITLE: EP-3 Sensor System Improvement (OSIP 14-95)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Commercial Contractor Depot Installation

ADMINISTRATIVE LEADTIME: 5 Months PRODUCTION LEADTIME: 6 Months

CONTRACT DATES: FY 1998: FY 1999: 3/99 FY 2000: 3/00

DELIVERY DATE: FY 1998: FY 1999: 9/99 FY 2000: 9/00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (24) kits	2	1.6	10	9.4			12	**																24	11.0
FY 1999 (6) *							6	.2																6	.2
FY 2000 (18) *									6	.4	12	.5												18	.9
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	2	1.6	10	9.4			18	.2	6	.4	12	.5												48	12.1

* Reflects continual upgrade of previously procured aircraft with OE-320 antenna. OE-320 modifications will be accomplished at Commercial depot. OE-320 and Advanced Signal Reconnaissance (ASR) modification will be accomplished by Field Mod Team in FY99 & FY00.

** "O" Level installation.

Installation Schedule

	FY 1997 & PRIOR	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	2	1	1	2	1	1	2	2	18			3	3		6	6									
Out	1	1	1		2	1	2	2	19	1		3	3		6	6									

	FY 2004				FY 2005			To Complete	TOTAL
	1	2	3	4	1	2	3		
In									48
Out									48

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: EP-3E MODIFICATION TITLE: EP-3 Sensor System Improvement (OSIP 14-95)

INSTALLATION INFORMATION: Replacement Aircraft

METHOD OF IMPLEMENTATION: Commercial Contractor Installation

ADMINISTRATIVE LEADTIME: 8 Months PRODUCTION LEADTIME: 24 Months

CONTRACT DATES: FY 1998: FY 1999: FY 2000: 6/00

DELIVERY DATE: FY 1998: FY 1999: FY 2000: 6/02

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 ()																									
FY 2000 (1)									1	6.7														1	6.7
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL									1	6.7														1	6.7

Installation Schedule

	FY 1997	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	& PRIOR	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In												1													
Out																		1							

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										1
Out										1

MODIFICATION TITLE: EP-3E Common Improvement Program (OSIP 02-96)

MODELS OF SYSTEM AFFECTED: EP-3E

TYPE MODIFICATION: Operational Improvement / Obsolescence

DESCRIPTION/JUSTIFICATION:

The EP-3E has an operational requirement for reliable UHF communications having anti-jam capabilities with multi-service and allied secure UHF communications systems. It is authorized by JCS Inst. CJCS 6251.01 of 31 July 96. The current UHF radio (AN/ARC-156) suffers from serious reliability and obsolescence problems, and lacks the intermodulation protection required for proper operation in today's operational environment. The AN/ARC-187 UHF radio to be installed is a derivative of the AN/ARC-164 which is presently utilized by the Air Force and would correct the above mentioned deficiencies. The radio is common with the P-3C, S-3B, and ES-3A aircraft and this commonality will significantly reduce logistic support requirements. Two AN/ARC-187 UHF transceivers will replace three AN/ARC-156 radios in 12 EP-3E's. Installation is provided in ECP #CTAS 96-01.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

This is a non-developmental item. A production contract for ARC-187 (GOTS) Radio Systems was awarded in the fourth quarter of FY 1996. The EP-3E option was awarded in the third quarter of FY97. TEMPEST and EMI testing scheduled in conjunction with the Sensor System Improvement Program began in 4th quarter FY98. Aircraft deliveries began in 4th quarter of FY 98 and conclude in 1st quarter FY2000.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
ARC-187	9	.2			3	.1																	12	.3	
Installation Kits N/R		.7																							.7
Installation Equipment																									
HD-1166/ARC-187	9	1.1			3	.4																	12	1.5	
HQ-CRYPTO Fill Ports					12	*																	12	*	
Installation Equipment N/R																									
Engineering Change Orders																									
Data				*																					*
Training Equipment																									
Support Equipment																									
Testing		.2		.1		.1																			.3
ILS		.1		.3		*																			.4
Other Support		.2		.3		.2																			.8
Interim Contractor Support																									
Installation Cost			12	.4																				12	.4
TOTAL PROCUREMENT	18	2.5		1.2	18	.7																	36	4.3	

Notes:

1. Totals do not add due to rounding
2. Asterisk indicates amount less than 51K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: EP-3E MODIFICATION TITLE: EP-3E Common Improvement Program (OSIP 02-96)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Team Mod

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 8 Months

CONTRACT DATES: FY 1998: 12/97 FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: 8/98 FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (12) kits			12	.4																				12	.4
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL			12	.4																				12	.4

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	2		1		1	2	1	1	1	1	1	1													
Out	1			1	1	1		2	1	1	2		1	1											

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										12
Out										12

MODIFICATION TITLE: EP-3 Global Positioning System Inertial Guidance System (OSIP 17-99)

MODELS OF SYSTEM AFFECTED: EP-3E

TYPE MODIFICATION: Operational Improvement / Safety

DESCRIPTION/JUSTIFICATION:

The EP-3E has an operational requirement Global Positioning System (GPS) Integration Guidance (GIG) requirement to upgrade the current GPS system (ARN-151) to comply with the ICAO standard: This will allow the upgrade/replacement of existing components to meet the FY 2000 requirement. The Operational Requirements Document (ORD) that applies to this effort is CAPSTONE ORD CAF-002-88.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

The procurement of this upgrade will be accomplished in FY 1999. Aircraft deliveries are scheduled to begin in the second quarter of FY 1999 and conclude in the first quarter FY 2000.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits							12	.6															12	.6	
Installation Kits N/R								.2																.2	
Installation Equipment							12	.8															12	.8	
Installation Equipment N/R																									
Engineering Change Orders																									
Data																									
Training Equipment								.2																.2	
Support Equipment																									
Testing																									
ILS								.3																.3	
Other Support								.1																.1	
Interim Contractor Support																									
Installation Cost							12	.6															12	.6	
TOTAL PROCUREMENT							24	2.8															24	2.8	

Notes:

1. Totals do not add due to rounding
2. Asterisk indicates amount less than 51K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: EP-3E

MODIFICATION TITLE: EP-3 Global Positioning System Inertial Guidance System (OSIP 17-99) GPS

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Team

ADMINISTRATIVE LEADTIME: 3 Months

PRODUCTION LEADTIME: 3 Months

CONTRACT DATES: FY 1998: _____ FY 1999: 1/99 FY 2000: _____

DELIVERY DATE: FY 1998: _____ FY 1999: 4/99 FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 (12) kits							12	.6																12	.6
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL							12	.6															12	.6	

Installation Schedule

	FY 1997 & PRIOR	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In						4	4	4																	
Out							4	4	4																

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										12
Out										12

CLASSIFICATION:

UNCLASSIFIED

BUDGET ITEM JUSTIFICATION SHEET P-40									DATE: February 1999				
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications								P-1 ITEM NOMENCLATURE P-3 Series Modifications					
Program Element for Code B Items:								Other Related Program Elements					
	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
QUANTITY													
COST (In Millions)	1,197.0		216.9	225.3	286.0	276.2	142.6	145.0	152.5	179.8	179.1	1,066.3	4,066.7
<p>This line item funds modifications to P-3 aircraft. The P-3 Orion is a 4 engine, long-range maritime surveillance aircraft which performs Anti-Submarine (ASW) and Anti-Surface Warfare (ASUW) in support of battle group and littoral operations. The overall goal of the modifications budgeted in FY2000 is to continue the CP-2044 computer installation (part of Update III), weapon system improvements, GPS, upgrading and refurbishing airframe components and systems. Total aircraft is 221. The P-3C has an average service life of 29.5 years and the first P-3C will reach end of service in 1999. The specific modifications budgeted and programmed are:</p>													
(TOA, \$ in Millions)													
<u>OSIP No.</u>	<u>Description</u>	<u>Prior Years</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To Complete</u>	<u>Total</u>
80-84	Update III Block Upgrade	755.0	18.6	44.1	71.9	96.0	19.0	21.9	22.1	26.7	27.5	261.8	1364.5
53-85	Critical Systems Improvements	12.2	1.1	1.6	1.2	1.2	1.0	1.0	0.9	0.6	0.9		21.6
60-86	UHF/VHF Comm. Update	69.3	5.6	10.2	11.6	7.2	5.5	3.0	0.8	7.9	5.4	7.9	134.4
28-92	GPS	14.6	3.6	8.0	9.4	2.6							38.2
42-92	CNIP	45.6	46.8	0.2									92.6
10-94	Sustained Readiness	94.1	45.8	64.4	61.6	62.8	61.3	71.1	62.1	75.2	77.0	784.4	1459.9
29-94	ASUW Improv. Prog.	206.1	91.5	95.9	128.7	106.0	55.9	48.0	66.6	69.5	68.3	12.1	948.6
19-96	P-3 Derivative A/C GPS	0.2	3.8	0.7	1.5	0.4							6.6
24-98	P-3 (UP-3A SATCOM)			0.2									0.2
TOTAL		1197.0	216.9	225.3	286.0	276.2	142.6	145.0	152.5	179.8	179.1	1066.3	4066.7
The amounts listed below show Reserve A/C funding which are included in the amounts above													
				3.4	6.5								9.9
* Indicates value less than \$51,000. Totals may vary due to rounding													

CLASSIFICATION:

DD Form 2454, JUN 86

UNCLASSIFIED

MODIFICATION TITLE: Update III Block Upgrade (OSIP 80-84)MODELS OF SYSTEM AFFECTED: P-3CTYPE MODIFICATION: Operational Improvement

DESCRIPTION/JUSTIFICATION:

The Update III Common Configuration provides the Fleet with significantly improved anti-submarine warfare detection and classification which are essential for target prosecution in average and poor water conditions. This program will modify older P-3's to an Update III common configuration. This modification includes associated processors, receivers, displays, and recorders. Update III Common Configuration is comprised of two major efforts: the Block Modification Upgrade program and the AN/USQ-78 Upgrade program. Both are based on Decision Coordinating Paper W-080-AS and the Program Management Plan #0526 serial 902D/6U324405. The objective of the Block Modification Upgrade program is to standardize the Maritime Patrol Aircraft fleet to the Update III configuration. This OSIP will update the configuration of 17 Update I, II, and II.5 aircraft towards the total inventory requirement of 221 aircraft. The objective of the AN/USQ-78 program is to correct display shortcomings of the USQ-78 system as identified by Fleet Operational Advisory Group and by Operational Test and Evaluation, to provide for future workload sharing capability as directed by Chief Naval Operations (CNO) and processing growth for the life of the aircraft. Total aircraft and lab trainers to be modified by Loral ECP #LFS-95-0011 is 152. Trainer procurement of Generic Acoustic Stimulation System (GASS) beginning and FY02 through FY05 will modify existing Weapon System Trainers (WST).

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Update III received approval for limited production in December 1983 and December 1984. Approval for full production was received in January 1986.

MODIFICATION TITLE: Update III Block Upgrade (OSIP 80-84)

MODELS OF SYSTEM AFFECTED: P-3C

TYPE MODIFICATION: Operational Improvement

FINANCIAL PLAN (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
AN/AQH-4 Kits	295	8.5																						295	8.5
AFC Kits	102	63.5																						102	63.5
MLU Kits	11	.4																						11	.4
Aural Monitor Kits	26	*																						26	*
MK-50 Kits	147	4.0																						147	4.0
USQ-78A Kits	2	.2	7	1.2	8	1.3	8	1.3	6	1.0	7	1.2	6	1.1	6	1.1	6	1.1	6	1.1	90	19.5	152	30.1	
Block Mod Upgrade Kits							5	4.7	12	11.3														17	16.0
Installation Kits N/R		33.5		2.7		7.0		9.8		1.0															53.9
Installation Equipment																									
AN/UYS-1 Equip	102	99.0																						102	99.0
AN/USQ-78 (Dis/Cnt)Equip	59	41.6																						59	41.6
AN/ALQ-158 (Ant/Preamp)Equip	91	1.3																						91	1.3
AN/ARR-78 Equip	204	80.8																						204	80.8
GTC 95-3 APU Equip	59	4.9																						59	4.9
SG-1156/A Equip	134	4.7																						134	4.7
Kits (AN/ASQ-114) Equip	76	7.3																						76	7.3
AN/AQH-4 Equip	72	5.6																						72	5.6
MX-10520/AYA-8 Equip	58	28.6																						58	28.6
CP-2044/ASQ CMOS Equip	156	41.2																						156	41.2
CP-2044/ASQ CPU Equip	121	64.1																						121	64.1
USQ-78A/CHRDS Equip	2	34.2	7	8.2	8	9.6	8	9.3	6	6.1	7	10.5	6	9.7	6	10.0	6	10.2	6	10.5	90	144.1	152	262.4	

Notes:

- 1. Asterick indicates amount less than 51K

MODIFICATION TITLE: Update III Block Upgrade (OSIP 80-84)

MODELS OF SYSTEM AFFECTED: P-3C

TYPE MODIFICATION: Operational Improvement

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
CHRDS Equip	4	.1																						4	.1
Block 1C Harpoon Equip	126	4.8					5	.1	12	.3														143	5.2
AN/ASH-33/RDDS	101	16.6			120	9.7																		221	26.3
CHEX Equip	27	10.1																						27	10.1
ASP BLOCK I/II Equip	27	2.4																						27	2.4
CMEP Equip	83	14.2																						83	14.2
Logic Unit Upgrade Equip	7	3.5																						7	3.5
Sono Ref Sys ARS-5	26	4.5																						26	4.5
Common CONFIG Equip																									
PEP Equip					7	1.0	10	.6	24	1.5														41	3.1
DASD/DASD Docks Equip			15	.1	30	.2	16	.1	12	.1	14	.1	12	.1	12	.1	12	.1	12	.1	180	1.8		315	2.8
AN/ALR-66							5	3.6	12	8.6														17	12.2
ADR								5.0																	5.0
LESPA Equip						7.8		7.4																	15.2
AN/UYS-1/AN/USQ-78A							5	12.3	12	29.1														17	41.4
ASCL (AN/ARR-78)							5	5.9	12	14.1														17	20.0
SG-1156							5	.2	12	.6														17	.8
AN/AQH-4 (V) 2							10	2.7	24	6.5														34	9.2
CP-2044/ASQ UPGRD (CPU)							5	4.1	12	9.9														17	14.0
AN/ASH-33							5	.2	12	.5														17	.7
Installation Equipment N/R		47.7																							47.7
Engineering Change Orders																									
Data		12.8		.6		.6		.1		.5		.5		.4		.4		.4		.4		.4		9.7	26.4
Training Equipment		11.8		.2		.9		.4		.6		.6		6.6		6.5		10.8		11.2					49.4
Support Equipment		1.6																							1.6
ILS		.9																							.9
Other Support		79.1		5.6		6.1		3.7		4.1		5.6		3.6		3.7		3.7		3.7		3.7		79.8	198.7
Interim Contractor Support																									
Installation Cost	486	21.2					14	.3	8	.4	8	.4	6	.4	7	.4	6	.4	6	.3	102	6.9		643	30.9
TOTAL PROCUREMENT	2,118	755.0	29	18.6	173	44.1	92	71.9	168	96.0	28	19.0	24	21.9	24	22.1	24	26.7	24	27.5	360	261.8		3,064	1364.5

Notes:

1. Totals do not add due to rounding
2. Asterisk indicates amount less than 51¢

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3C MODIFICATION TITLE: Update III Block Upgrade (OSIP 80-84) USQ-78A

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation will be accomplished on-site by contractor field team

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 22 Months

CONTRACT DATES: FY 1998: 1/98 FY 1999: 1/99 FY 2000: 1/00

DELIVERY DATE: FY 1998: 11/00 FY 1999: 11/01 FY 2000: 11/02

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (15) kits							7	.3	8	.4													15	.7	
FY 1999 (8) kits											8	.4												8	.4
FY 2000 (6) kits													6	.4										6	.4
FY 2001 (7) kits															7	.4								7	.4
FY 2002 (6) kits																	6	.4						6	.4
FY 2003 (6) kits																			6	.3				6	.3
FY 2004 (6) kits																					6	.4		6	.4
FY 2005 (6) kits																						6	.6	6	.6
To Complete (90) kits																						90	5.9	90	5.9
TOTAL							7	.3	8	.4	8	.4	6	.4	7	.4	6	.4	6	.3	102	6.9	150**	9.6	

** Two (2) kits installed in Lab.

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In					2	2	1	2	2	2	2	2	2	2	2	2	1	2	1	2	1	2	2	2	
Out					2	2	1	2	2	2	2	2	2	2	2	2	1	2	1	2	1	2	2	2	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	2	1	2	1	2	1	2	1	102	150
Out	2	1	2	1	2	1	2	1	102	150

Completions same as inductions; one week effort.

- Integration of PEP into USQ-78A including ECP is scheduled for FY98. All USQ-78A procured after FY97 will include PEP. Seven (7) retrofits procured in FY98 will retrofit 7 USQ-78A kits procured in FY97.
- USQ-78A to be installed in trainers as depicted in the APN-5 install portion of the OSIP.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3C MODIFICATION TITLE: Update III Block Upgrade (OSIP 80-84) Block Mod Upgrade

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation will be accomplished at contractor's facility.

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 24 Months

CONTRACT DATES: FY 1998: _____ FY 1999: 1/99 FY 2000: 1/00

DELIVERY DATE: FY 1998: _____ FY 1999: 1/01 FY 2000: 1/02

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																							
FY 1999 (5) kits									5	*												5	*
FY 2000 (12) kits											12	*										12	*
FY 2001 () kits																							
FY 2002 () kits																							
FY 2003 () kits																							
FY 2004 () kits																							
FY 2005 () kits																							
To Complete () kits																							
TOTAL									5		12	*										17	*

* Installs funded via separate program outside OSIP 80-84.

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In																		2	2	1	3	3	3	3	
Out																		2	2	1	3	3	3	3	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										17
Out	3									17

MODIFICATION TITLE Critical Systems Improvements (OSIP 53-85)MODELS OF SYSTEM AFFECTED P-3CTYPE MODIFICATION Operational Improvement/Safety

DESCRIPTION/JUSTIFICATION

The purpose of this program is to provide the requisite funding to implant various minor cost effective changes to critical P-3 weapon systems. These changes are essential to the operation of the aircraft and/or it's mission systems, but are not currently being addressed by an existing aircraft modification program. The changes can be either airframe, avionic, or procedures.

STANDBY ATTITUDE INDICATOR (PEANUT GYRO) ECP BFGAAS ID-1481A/A-25583-48: This ECP modifies the P-3C Standby Attitude Indicator (Peanut Gyro) to operate with a DC power vice an AC power. This modification is planned for 246 aircraft (221 P-3C and 25 derivatives) 14 trainers and a rotatable pool of 50 units that will be established to support installation.

E-J RECEIVER MOD AN/ALR-66 B(V)3 ECP LITTON 970: The AN/ALR-66B(V)3 ECP upgrades certain components of the AN/ALR-66A(V)3 ESM to improve system performance, including the E-J Amplifier Receivers, CD Amplifier Receivers, Processor Interface and Computer Converter. The effort under this OSIP supports the modification and certain RIM in support of AN/ALR-66 B(V)3 installs on 145 P-3C aircraft, 6 operational trainers and 10 test bench installations.

APS-115 FEEDBALL MODIFICATION ECP CUBIC 2509-02F3: This ECP are liability and performance improvement to the APS-115 radar feedball. The unmodified feedballs are susceptible to burning out which decreased the APS 115 sensitivity (or caused failure) and made the feedball incompatible with the AN/ALR-66 B(V)3 ESM system, which uses the feedball as the center channel receiver. This modified will be installed in all APS-115 equipped aircraft. This modification effects 121 P-3C aircraft.

P-3 PILOT/COPILOT/ PLANE CAPTAIN SEAT MODIFICATION FOR THE MA-16 INERTIAL REEL ECP JAX P3-519: MA-1 and MA-2 Inertial Reels are no longer available in the supply system and further procurement is anticipated. This ECP provides a kit to modify 50 Pilot/Copilot/Plane Captain seats to install the MA-16 Inertial Reel as a substitute for the MA-1/2 to meet outstanding requirements.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES

The changes identified are minor and do not require approval for full production.

MODIFICATION TITLE Critical Systems Improvements (OSIP 53-85)

MODELS OF SYSTEM AFFECTED P-3C TYPE MODIFICATION Operational Improvement/Safety

FINANCIAL PLAN (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
APS-115 Feedball Mod	52	.7	36	.9	14	.3	16	.4																118	2.3
EJ Receiver Mod					120	.6	25	.2																145	.8
Standby (Peanut) Gyro Mod					60	.3	40	.2	40	.3	40	.3	40	.3	40	.3	26	.2	24	.3				310	2.0
MA-16 Inertial Reel Mod kits					50	.1																	50	.1	
Prior Years Kits		7.0																							7.0
ARC-182 Radio Kits	35	.4																						35	.4
ATSG Modification	136	.2																						136	.2
Installation Kits N/R		1.0				*																			1.1
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data		1.3				.1		.2		.3		.3		.3		.3		.2		.3					2.9
Training Equipment		.1								.3		.1		.1		.1									.8
Support Equipment		*				.1																			.1
ILS		*																							*
Other Support		.5		.2		.2		.2		.3		.3		.3		.3		.3		.3					3.0
Interim Contractor Support																									
Installation Cost		.9		**		**		**		**		**		**		**		**		**					.9
TOTAL PROCUREMENT	223	12.2	36	1.1	244	1.6	81	1.2	40	1.2	40	1.0	40	1.0	40	.9	26	.6	24	.3				21.6	

Notes:

1. Totals do not add due to rounding
2. Asterick indicates amount less than 51k ** "O"-Level Installs - No Cost

MODIFICATION TITLE: Ultra High Frequency (UHF)/Very High Frequency (VHF) Communications Update (OSIP 60-86)

MODELS OF SYSTEM AFFECTED: P-3A/B/C & 4 Special Projects

TYPE MODIFICATION: Operational Improvement

DESCRIPTION/JUSTIFICATION:

P-3 aircraft have an operational requirement for UHF satellite communications (SATCOM), and currently have satellite capable communications suites. JCS Memo CJCSI 6251.01 OF 31 July 1996 modified SATCOM access to require Advanced Narrowband Digital Voice Terminal (ANDVT) and Demand Assigned Multiple Access (DAMA) standards by 30 September 1996. In addition, the ARC-101 VHF radio does not have a 25KHz channel capability and does not comply with Air Traffic Control regulations and represents a potential safety of flight issue. The older UHF and VHF (ARC-143 and ARC-101) radios suffer from considerable degraded performance because of crosswalk sensitivity, lack of channel selectivity, intermodulation and are not compatible with the JCS satellite access requirements. The ARC-182 is the Navy's standard VHF radio and corrects the VHF deficiencies. The ARC-187 is currently installed in 179 P-3 aircraft and meets all P-3 requirements. In FY 1993, Vinson Baseband kits were procured to provide succinct channel identification for the ARC-187 radios currently installed in P-3 aircraft.

The FY 1994 and subsequent programs will bring all 217 P-3C and 4 Special Project aircraft to a common radio configuration which meets all requirements for SATCOM and Havequick. Due to differences in current aircraft configuration, there are 4 types of kits to be installed: 21 aircraft will receive the AN/ARC-187/182/ANDVT/DAMA SATCOM installation; 19 aircraft will receive the AN/ARC-187/ANDVT/DAMA SATCOM installation; 41 aircraft will receive the AN/ARC-182/ANDVT/DAMA SATCOM installation; 140 aircraft will receive the DAMA SATCOM installation. There is one (1) AN/ARC-182 per aircraft receiving this radio (total of 62 aircraft and 62 radios). There are two (2) AN/ARC-187 radios per aircraft receiving this radio (total of 40 aircraft and 80 radios).

P-3C Communications Improvement Program (CIP) Engineering Change Proposal (ECP) Lockheed 1025: This ECP covers the installation of the kit and equipment necessary for DAMA SATCOM which includes the AN/ARC-187/VIASAT Modem combination, modified ARC-187 Controls and Advanced Narrowband Digital Voice Terminal (ANDVT). In aircraft that presently do not have an ARC-187 UHF and/or ARC-182 VHF radios installed, ECP 988 (UHF) and/or ECP 990 (VHF) will be installed in conjunction with ECP 1025.

Note: The last 35 aircraft will receive the A-Kit and installation and a partial B-Kit (No Modem).

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

The ARC-182 and ARC-187 radios have Approval for Full Production (AFP) and are verified in the P-3 aircraft. ECP 1025 (CIP) was approved in January 1997. DAMA SATCOM certification for the ARC-187/Viasat Modem combination was received in March 1998. Production installations began in January 1998.

MODIFICATION TITLE: Ultra High Frequency (UHF)/Very High Frequency (VHF) Communications Update (OSIP 60-86)

MODELS OF SYSTEM AFFECTED: P-3A/B/C & 4 Special Projects

TYPE MODIFICATION: Operational Improvement

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
AFC(P-3C)ARC-182	134	2.6																						134	2.6
AFC(P-3C)ARC-187	163	2.2																						163	2.2
AFC(P-3A/B)ARC-182	11	.3																						11	.3
AFC(P-3C)UHF/VHF UPGRADE	26	.3																						26	.3
AFC(P-3C)KG-84	143	2.6																						143	2.6
AFC(P-3C)SATCOM COMPATIBILITY	141	1.6																						141	1.6
AFC(P-3C)VINSON BASEBAND	378	2.2																						378	2.2
AFC(P-3C)ARC-182/187/ANDVT/DAMA							8	.3									3	.1	3	.1	7	.4	21	1.0	
AFC(P-3C)ARC-187/ANDVT/DAMA							6	.2	4	.2		*					5	.2			4	.2	19	.8	
AFC(P-3C)ARC-182/ANDVT/DAMA							9	.3	4	.2	8	.3	2	.1			11	.5	1	*	6	.3	41	1.7	
AFC(P-3C)ANDVT/DAMA	1	.1			42	.9	23	.5	11	.3	13	.3	6	.1			26	.7	8	.2	10	.3	140	3.4	
Installation Kits N/R		17.1		4.9																				22.0	
Installation Equipment																									
ARC-187 (2 per A/C)	326	16.0					28	1.6	8	.4		*					16	1.0	6	.4	22	1.4	406	20.7	
ARC-182	152	4.1				**	17	*	4	*	8	*	2	*			14	*	4	*	13	*	214	4.3	
ARC-187 Control (2 per A/C)					84	1.4	92	1.6	38	.7	42	.8	16	.3			90	1.7	24	.5	54	1.1	440	8.0	
CRYPTO Fill Port (2 per A/C)	12	*			90	.1	92	.1	38	*	42	.1	16	*			90	.1	24	*	54	.1	458	.5	
RF Interface (1 per A/C)	1	****			42	.7	46	.8	19	.3	21	.4	8	.1			45	.8	12	.2	27	.5	221	3.8	
Modem (1 per A/C)					42	1.5	50	2.0	19	.8	21	.9	8	.3			38	1.7			14	.7	192	7.8	
ANDVT	2	***			42	***	46	***	19	***	21	***	8	***			45	***	12	***	27	***	222	***	
Installation Equipment N/R		2.7																						2.7	
Engineering Change Orders																									
Data		5.0				1.3		.1																	6.3
Training Equipment	46	.8		.2	6	2.3	7	.5	5	.2														64	4.1
Support Equipment		2.3																							2.3
ILS		.3		.1		.6		.5		.2		.2		.2		.1		.2		.1					2.4
Other Support		3.2		.5		1.4		1.1		.7		.6		.5		.1		.6		.5					9.1
Interim Contractor Support																									
Installation Cost	997	5.7					29	1.9	49	3.4	28	1.9	19	1.3	8	.7	3	.2	45	3.4	39	3.1	1,217	21.6	
TOTAL PROCUREMENT	1,536	69.3		5.6	348	10.2	424	11.6	169	7.2	176	5.5	66	3.0		.8	383	7.9	94	5.4	238	7.9	3,434	134.4	

Notes:

- 1. Totals do not add due to rounding
- 2. Asterick indicates amount less than 51K
- ** AN/ARC-182 radios to be obtained from F/A18 or other aircraft installing AN/ARC-210 radios.
- *** ANDVT provided by NSA.
- **** Included in Prototype A-Kit cost.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3A/B/C MODIFICATION TITLE: Ultra High Frequency (UHF)/Very High Frequency (VHF) Communications Update (OSIP 60-86)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: P-3A/B/C & 4 Special Projects

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 1998: 7/98 FY 1999: 1/99 FY 2000: 1/00

DELIVERY DATE: FY 1998: 2/99 FY 1999: 1/00 FY 2000: 1/01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (1039) kits	997	5.7					29	1.9	13	.9													1,039	8.5	
FY 1999 (46) kits									36	2.5	10	.7											46	3.2	
FY 2000 (19) kits											18	1.2	1	.1									19	1.3	
FY 2001 (21) kits													18	1.2	3	.3							21	1.5	
FY 2002 (8) kits															5	.4	3	.2					8	.6	
FY 2003 () kits																									
FY 2004 (45) kits																			45	3.4			45	3.4	
FY 2005 (12) kits																						12	1.0	12	1.0
To Complete (27) kits																						27	2.1	27	2.1
TOTAL	997	5.7					29	1.9	49	3.4	28	1.9	19	1.3	8	.7	3	.2	45	3.4	39	3.1	1,217	21.6	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	997					9	10	10	12	12	12	13	7	7	7	7	5	5	5	4	4	4			
Out	997					9	10	10	10	12	12	12	13	7	7	7	7	5	5	5	5	4	4	4	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	3				12	12	12	11	37	1217
Out	3				12	12	12		48	1217

MODIFICATION TITLE: Global Positioning System (GPS) (OSIP 28-92)

MODELS OF SYSTEM AFFECTED: P-3C, SPECIAL PROJECTS

TYPE MODIFICATION: Operational Improvement / Safety

DESCRIPTION/JUSTIFICATION:

The NAVSTAR Global Positioning System (GPS) is a space-based radio positioning and navigation system that will provide three dimensional position, velocity, and time information to suitably equipped users worldwide in all weather conditions. The GPS equipment consists of a receiver/processor, interface unit, fixed and controlled pattern antennas, and a control display unit. The GPS will provide highly improved navigation accuracy, enhancing mission effectiveness in all areas. Congress has mandated that GPS be installed by FY00. This modification affects 217 P-3C aircraft (168 active and 49 reserve), and 4 Special Projects aircraft.

GPS Engineering Change Proposal (ECP) NADEP JAX 187: This ECP covers the installation of the GPS kit and equipment. Spawar provides the ARN-151 GPS Receiver, the AE-4 Antenna system, the 1553 data bus and 3 Control Display Navigation Units (CDNUs) as GFE.

ELECTRONIC FLIGHT DISPLAY SYSTEM (EFDS) ECP NADEP JAX 187R5/491: This ECP replaces the existing pilot and copilot analog Flight Director Indicator (FDI) and Horizontal Situation Indicator (HSI) and Navigator/Communicator HSI with Electronic FDI's (EFDI) and Electronic HSI's (EHSI). The Electronic flight instruments are being installed to correct an interoperability deficiency discovered during Operational Testing.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES

NAVSTAR GPS program received approval for limited production (ALP) in June 1986 and received Approval for Full Production (AFP) in January 1992. Developmental testing (DT-III) of the GPS installation in a P-3C was completed in June 1992. Follow-on Test and Evaluation (OT-III) was completed in January 1994. GPS is presently in full production and will complete installations in FY00.

FINANCIAL PLAN (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
GPS Airframe Kit	93	3.7	22	.9	67	1.7	39	.7															221	6.9	
EFDS Airframe Kit	1	.3			26	1.2	18	.8															45	2.4	
Installation Kits N/R		.6		.2																				.8	
Installation Equipment																									
LTN-72	2	1.9																					2	1.9	
EFDS EHSIEFDI	222	3.5	45	.7	60	.9																	327	5.1	
EFDS Controls	133	.2	27	.1	36	.1																	196	.4	
ASM	74	.5	39	.3	67	.7	39	.4															219	1.9	
Installation Equipment N/R																									
Engineering Change Orders																									
Data		.1				.1		.3																.5	
Training Equipment		.4				.4		2.3		.6														4.2	
Support Equipment																									
ILS				*		*		.2		.1														.2	
Other Support		2.0		.5		1.7		1.1		.3														5.7	
Interim Contractor Support																									
Installation Cost	43	1.3	33	1.0	39	1.2	67	3.1	39	1.6													221	8.1	
TOTAL PROCUREMENT	525	14.6	133	3.6	256	8.0	96	9.4		2.6													1,010	38.2	

Notes:

1. Totals do not add due to rounding
2. Asterisk indicates amount less than \$1k

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3C, SPECIAL PROJECTS MODIFICATION TITLE: Global Positioning System (OSIP 28-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION NADEP Jax Field Team

ADMINISTRATIVE LEADTIME: 5 Months PRODUCTION LEADTIME: 20 Months

CONTRACT DATES: FY 1998: 2/98 FY 1999: 2/99 FY 2000: _____

DELIVERY DATE: FY 1998: 10/99 FY 1999: 10/00 FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 1998 & PY (182) kits	43	1.3	33	1.0	39	1.2	67	3.1															182	6.5
FY 1999 (39) kits									39	1.6													39	1.6
FY 2000 () kits																								
FY 2001 () kits																								
FY 2002 () kits																								
FY 2003 () kits																								
FY 2004 () kits																								
FY 2005 () kits																								
To Complete () kits																								
TOTAL	43	1.3	33	1.0	39	1.2	67	3.1	39	1.6												221	8.1	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	76	9	10	10	10	17	17	17	16	15	15	9													
Out	67	9	9	10	10	10	17	17	17	16	15	15	9												

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										221
Out										221

MODIFICATION TITLE: Counter Narcotics Improvement Program (CNIP) (OSIP 42-92)

MODELS OF SYSTEM AFFECTED: P-3C

TYPE MODIFICATION: Improved Capability

DESCRIPTION/JUSTIFICATION:

Chief of Naval Operations (N-515) has identified a requirement for a bolt-on/bolt-off AN/APG-66 Air-to-Air radar system, electro-optical imaging, and intelligence collection equipment to counter narcotic trafficking operations. These systems will be transportable between standard P-3C aircraft to allow operational flexibility of available airframes. Funding is identified and appropriated on an annual basis for transfer from the DOD Counter Narcotics. ECP JAX-P3-391 for Rigel Equipment procurement and installation into (8) UD11 and (5) UD11.5 P-3C aircraft was approved 23 Jan 95. ECP JAX-P3-315 for APG-66 Air-to-Air RADAR and Cluster Ranger Electro-Optical Imaging on (18) non Roll-On Roll-Off and (8) Roll-On Roll-Off kits was approved 30 Jun 94. FY1997 funding provided under the Economy Act for procurement of Counterdrug equipment for U.S. Customs Agency.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Approval for full production is not required.

FINANCIAL PLAN (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
P-3 Kits (APG-66/AVX-1)	18	.9																					18	.9	
RIGEL System	18	.4		*																			18	.4	
Installation Kits N/R		1.2		.1																				1.3	
Installation Equipment																									
P-3 Customs/AEW Mods				46.3																				46.3	
APG-66	10	11.6				.2																	10	11.8	
AVX-1	8	6.1																					8	6.1	
RIGEL System	10	8.5		.1																			10	8.6	
Installation Equipment N/R		4.8																						4.8	
Engineering Change Orders																									
Data		.7		.1																				.8	
Training Equipment		.2																						.2	
Support Equipment		.3																						.3	
ILS		.5																						.5	
Other Support		7.0		.3																				7.3	
Interim Contractor Support		.6																						.6	
Installation Cost	36	2.7		*																			36	2.7	
TOTAL PROCUREMENT	64	45.6		46.8		.2																	64	92.6	

Notes:

1. Totals do not add due to rounding
2. Asterisk indicates amount less than 51k

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3C MODIFICATION TITLE: Counter Narcotics Improvement Program (CNIP) (OSIP 42-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: NADEP Jacksonville Field Modification Team

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 3 Months

CONTRACT DATES: FY 1998: FY 1999: FY 2000:

DELIVERY DATE: FY 1999: FY 1999: FY 2000:

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (36) kits	36	2.7																						36	2.7
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	36	2.7																						36	2.7

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	20	2	4	2	2	6																			
Out	18	2	4	2	2	4	4																		

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										36
Out										36

MODIFICATION TITLE: Sustained Readiness Program (SRP) (OSIP 10-94)

MODELS OF SYSTEM AFFECTED: P-3C

TYPE MODIFICATION: Sustainment

DESCRIPTION/JUSTIFICATION:

The Sustained Readiness Program, encompassing AFC 578, is an Operational Service Life Extension Program which will extend the operational service life of P-3C from present 30 years to the aircraft's fatigue life (approximately 38 years) by preemptively replacing airframe components and systems identified as having impact on future aircraft availability due to safety, structural performance, and component unsupportability. This will allow full realization of the aircrafts designed service life but will not extend the fatigue life of those aircraft. If left unchecked, these problem areas collectively will result in significant loss of aircraft from the operational inventory due to operational and support funding limitations. To ensure future aircraft safety and supportability, this procurement investment includes a number of cost-effective modifications to a number of systems which are among the principle maintenance degraders on the aircraft. Supportability items include modification to the environmental control system, autopilot, inertial navigation system, radar and the fuel quantity system. The SRP affects 222 aircraft and is a critical component to the overall MPA force management strategy to satisfy the Total Force Level Warfighting Requirement of 12 Active squadrons, 7 reserve squadrons (42 end items), a Fleet Reserve Squadron and various special project aircraft for a total of 221 aircraft (as delineated in the Navy Maritime Patrol Aircraft Ten-Year Plan). An SRP upgraded aircraft will be delivered in the 2nd quarter of FY 1999 to be the fatigue test article for the Service Life Assessment Program. The validating Operator

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Competitive bid contract awarded 19 September 1994. Preparations for follow-on contract award are in progress with award expected in March 1999.

FINANCIAL PLAN (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
AFC Kit-SRP	14	19.5	15	16.5	12	16.4	10	17.5	14	25.2	13	24.1	12	22.9	8	15.8	14	28.5	14	29.5	87	197.2	213	413.3	
AFC Kit-SRP Option	9	12.8																					9	12.8	
APS-115 Mod																					161	28.7	161	28.7	
Cond Kits		20.4		3.1		8.6		4.4		6.3		6.1		5.8		4.0		7.1		7.3		65.7		138.8	
Vertical Gyro																					221	18.5	221	18.5	
ASW-31 Refurbishment																					221	60.6	221	60.6	
Installation Kits N/R		25.9																		4.1				30.0	
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data		3.4		.3		.3		.3		.3		.3		.3		1.9		.3		2.8		1.8		12.0	
Training Equipment		.2								.1										2.1				2.5	
Support Equipment		.1																		1.1				1.2	
ILS		2.6																		.7				3.3	
Other Support		9.2		4.3		4.6		4.8		5.3		5.0		5.1		5.2		5.3		5.4		41.2		95.6	
Interim Contractor Support																									
Installation Cost			11	21.7	14	34.4	15	34.6	10	25.5	10	25.7	14	37.0	13	35.3	12	33.9	8	23.8	115	370.9	222	642.7	
TOTAL PROCUREMENT	23	94.1	15	45.8	12	64.4	10	61.6	14	62.8	13	61.3	12	71.1	8	62.1	14	75.2	14	77.0	690	784.4	825	1459.9	

Notes:

1. Totals do not add due to rounding
2. Asterisk indicates amount less than 51k

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3C MODIFICATION TITLE: Sustained Readiness Program (SRP) (OSIP 10-94)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation will be accomplished by contractor mod teams.

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 24 Months

CONTRACT DATES: FY 1998: 12/97 FY 1999: 12/98 FY 2000: 12/99

DELIVERY DATE: FY 1998: 12/99 FY 1999: 12/00 FY 2000: 12/01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (50) kits			11	21.7	14	34.4	15	34.6	10	25.5													50	166.2	
FY 1999 (10) kits											10	25.7											10	25.7	
FY 2000 (14) kits													14	37.0									14	37.0	
FY 2001 (13) kits															13	35.3							13	35.3	
FY 2002 (12) kits																	12	33.9					12	33.9	
FY 2003 (8) kits																			8	23.8			8	23.8	
FY 2004 (14) kits																						14	41.9	14	41.9
FY 2005 (14) kits																						14	42.5	14	42.5
To Complete (87) kits																						87	286.4	87	286.4
TOTAL			11	21.7	14	34.4	15	34.6	10	25.5	10	25.7	14	37.0	13	35.3	12	33.9	8	23.8	115	370.9	222	642.7	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	11		1		13			3	12		1	3	6	2	2	3	3	3	3	4	4	3	3	3	4
Out				1	2	1	3	3	3	3	4	3	4	4	4	5	4	4	4	3	3	3	4	4	4

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	3	3	3	3	2	2	2	2	115	222
Out	4	4	3	4	3	3	3	3	122	222

MODIFICATION TITLE: Anti-Surface Warfare (ASUW) Improvement Program (OSIP 29-94)

MODELS OF SYSTEM AFFECTED: P-3C

TYPE MODIFICATION: Operational Improvement

DESCRIPTION/JUSTIFICATION

The ASUW Improvement Program meets the Navy's requirement to rapidly provide a significant increase while addressing long range deficiencies in the current P-3's ability to perform Anti-Surface Warfare (ASUW), Over-the-Horizon Targeting (OTH-T), and Command, Control, Communications, and Intelligence (C3I). UNISYS/LORAL/LMTDS ECP AIP-001R1 was signed out in 1996 formally implementing the design change. The program procures non-developmental items and commercial off-the-shelf systems which have been used in an aircraft environment. The target aircraft for this modification are the P-3C Update III's which have been previously upgraded with the CP-2044 computer. The resulting weapon system will combat the emerging third world, limited operations, surface, subsurface, and air threats with simultaneous multi-mission capabilities. This modification focuses on improving the weapon system's capability for standoff targeting and classification. Significant advantages in non-acoustic processing and capability are provided by a APS-137B (V) 5 imaging radar, a Cluster Ranger electro optical system or the Advanced Imaging Multi-Spectral Sensor (AIMS) electro optical system, Replacement Data Storage System (RDSS), an EP-2060 pulse analyzer, and an increased IRDS focal length. C3I is improved with the Officer in Tactical Command Information Exchange System (OTCIXS), and Tactical Receive Equipment (TRE). Survivability enhancement will include ALE-47/AAR-47 missile warning countermeasures, explosive suppressant foam, and small circular area of probability weapon system to be procured starting in FY1994. Additional funding in FY1995 and FY1996 was utilized to meet an urgent fleet requirement to upgrade 17 Pre-AIP aircraft with Maverick armament control kits. FY1998 N/R is for Specific Emitter Identification (SEI) upgrade incorporation. The P3 AIP operational requirement document (ORD) is Ser # 355-88-94. The P-3C Sensor Integration RDT&E develops software and hardware necessary to integrate advanced sensors into embedded P-3C Update III computer systems, perform worksharing, and integrate tactical data into a fused tactical plot.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

This modification makes maximum use of previously developed subsystems. DT/OT-III (FOT&E) being performed on production aircraft. Training aircraft delivered to Fleet in Jan 98. First two production aircraft delivered to Fleet (Apr, May 98.)

FINANCIAL PLAN (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL				
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$			
RDT&E (H-2417)						9.4																			9.4		
PROCUREMENT																											
Installation Kits																											
AFC A Kit	13	14.2	8	8.5	6	9.1	11	12.2	6	6.7	3	3.4	3	3.5	4	4.8	4	5.0	4	5.1					62	72.6	
AFC B Kit		33.0		24.1		34.2		61.1		33.7		17.2		17.7		24.4		25.2		25.9						296.4	
Pre-AIP Armament Kit	17	12.9																							17	12.9	
Installation Kits N/R		22.6		3.8		2.9																				29.4	
Installation Equipment																											
GFE Sensors and Avionics		46.3		34.4		23.4		34.6		20.2		10.3		10.6		14.5		14.4		14.8						223.4	
Advanced IRDS		4.0																								4.0	
Installation Equipment N/R		8.5																								8.5	
Engineering Change Orders																											
Data		8.4		.6		.8		.9		.5		.4		.5		.5		.4		.3						13.3	
Training Equipment		16.2		4.4		6.2		2.6		4.1		1.7		1.6		6.6		6.2		3.9						53.5	
Support Equipment		3.7		1.3		2.3		4.2		.5		.4		.4		.4		.4		.4						14.1	
ILS		2.5		.9		2.4		1.5		.5		.4		.4		.4		.4		.3						9.7	
Other Support		29.9		11.8		11.9		11.5		9.9		5.7		4.9		6.0		5.8		5.6						102.2	
Interim Contractor Support																											
Installation Cost	13	3.8	8	1.7	6	3.5			11	29.9	6	16.5	3	8.5	3	8.9	4	11.8	4	11.9	4	12.1	4	12.1	62	108.6	
TOTAL PROCUREMENT	30	206.1	8	91.5	6	95.9	11	128.7	6	106.0	3	55.9	3	48.0	4	66.6	4	69.5	4	68.3						79	948.6

Notes:

1. Totals do not add due to rounding
2. Asterick indicates amount less than 51K
3. One (1) AIP is a Trial Kit Installation (TKI)

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3C MODIFICATION TITLE: Anti-Surface Warfare (ASUW) Improvement Program (OSIP 29-94)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation through FY98 funded turn-key operation. Installation for FY99 and out years funded in the year they occur.

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 1998: 11/97 FY 1999: 11/98 FY 2000: 11/99

DELIVERY DATE: FY 1998: 6/98 FY 1999: 11/99 FY 2000: 11/00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 1998 & PY (27) kits	13	3.8	8	1.7	6	3.5																	27	9.0
FY 1999 (11) kits									11	29.9													11	29.9
FY 2000 (6) kits											6	16.5											6	16.5
FY 2001 (3) kits													3	8.5									3	8.5
FY 2002 (3) kits															3	8.9							3	8.9
FY 2003 4() kits																	4	11.8					4	11.8
FY 2004 (4) kits																			4	11.9			4	11.9
FY 2005 (4) kits																					4	12.1	4	12.1
To Complete () kits																						4	12.1	
TOTAL	13	3.8	8	1.7	6	3.5			11	29.9	6	16.5	3	8.5	3	8.9	4	11.8	4	11.9	4	12.1	62	108.6

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	1	4	4	3	3	3	3	3	3	2	3	3	3	1	2	2	1	1	1	1		1	1	1	
Out	1			2	3	4	5	4	3	2	3	2	2	2	2	3	3	3	2	1		1	1	1	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	1	1	1	1	1	1	1	1	4	62
Out	1	1	1	1	1	1	1	1	4	62

MODIFICATION TITLE: Installation of Global Positioning System (GPS) and Electronic Flight Director System (EFDS) in P-3 Derivative Aircraft (OSIP 19-96)

MODELS OF SYSTEM AFFECTED: P-3 Derivative Aircraft

TYPE MODIFICATION: Operational Improvement / Safety

DESCRIPTION/JUSTIFICATION:

The Global Positioning System (GPS) is a space-based radio positioning and navigation system providing three-dimensional position, velocity, and time information to suitably equipped users worldwide in all weather conditions. GPS equipment (AN/ARN-151) consists of receiver/processor, interface unit, fixed and controlled pattern antennas, and control display unit. The Secretary of Defense has directed that GPS be installed in all "Passenger Carrying" aircraft by October 1998. The purpose of this program is to provide the requisite funding to implement the required modification. The modification will include integration of GPS with other navigation systems and the installation of an Electronic Heading Situation Indicator (EHSI) for display of information.

This modification affects 8 "Passenger-Carrying" P-3 derivative aircraft, 5 VP-3A and 3 UP-3A to be completed in FY1998. Additionally, 7 "Non Passenger-Carrying" aircraft, 1 UP-3A and 1 UP-3B in FY1999 and 2 EP-3J and 3 P-3B in FY2000 will be installed.

GPS Engineering Change Proposal (ECP) NADEP JAX P3-479: This ECP installs the AN/ARN-151 GPS and associated equipment to integrate into the Control Display Navigation Unit (CDNU), Mission Data Loader, and 1553B Data Bus System.

Hardware (GPS "A" Kits) will be provided by GPS Common Avionics OSIP 71-88. Software updates will be provided by OSIP 28-95.

FINANCIAL PLAN (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
A Kit			10	.8			5	.4																15	1.2
Installation Kits N/R		.1		.7																					.8
Installation Equipment																									
EHSI/FNIB/FNIB Adapter			10	1.8			5	1.0																15	2.8
Installation Equipment N/R																									
Engineering Change Orders																									
Data		*		.2				.1																	.3
Training Equipment																									
Support Equipment																									
ILS																									
Other Support		.1		.1			*	*																	.2
Interim Contractor Support																									
Installation Cost			2	.2	8	.7			5	.4														15	1.2
TOTAL PROCUREMENT		.2		3.8		.7		1.5		.4															6.6

Notes:

1. Totals do not add due to rounding
2. Asterick indicates amount less than 51K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3 Derivative Aircraft

MODIFICATION TITLE: Installation of Global Positioning System (GPS) and Electronic Flight Director System (EFDS) in P-3 Derivative Aircraft (OSIP 19-96)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Depot level field team will perform installations

ADMINISTRATIVE LEADTIME: _____ Months PRODUCTION LEADTIME: _____ Months

CONTRACT DATES: FY 1998: 6/97 FY 1999: 10/98 FY 2000: _____

DELIVERY DATE: FY 1998: 2/98 FY 1999: 3/99 FY 2000: _____

(\$ in Millions)

Cost:	Prior Yearss		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (10) kits			2	.2	8	.7																		10	.8
FY 1999 (5) kits									5	.4														5	.4
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL			2	.2	8	.7			5	.4														15	1.2

Installation Schedule

	FY 1997	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	& Prior	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	2		2	3	3					2	3														
Out	2		2	3	3					2	3														

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										15
Out										15

BUDGET ITEM JUSTIFICATION SHEET P-40										DATE: February 1999			
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications								P-1 ITEM NOMENCLATURE S-3 Series Modifications					
Program Element for Code B Items:								Other Related Program Elements					
	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
QUANTITY													
COST (In Millions)	1060.0		29.6	51.4	45.5	94.1	63.0	53.1	48.0	44.6	19.9	4.5	1,513.8
<p>This line item funds modifications to S-3 aircraft. The S-3B is a carrier based, all weather, high wing, high subsonic, twin engine, multi-mission aircraft capable of independent Anti-Submarine Warfare (ASW) and Anti-Surface Warfare (ASUW) operations and tanking. The overall goal of the modifications budgeted in FY2000 is to complete the Block Upgrade I effort; to continue the UHF/VHF communications improvement and the Co-Processor Memory Unit efforts; and to upgrade navigational equipment (Global Positioning System), critical avionics, and critical structures within the aircraft. Total Active Inventory (TAI) is 113. There are 113 aircraft in the S-3B inventory. The S-3B has an average service life of 29 years and the first S-3B will reach end of service in 2002. The specific modifications budgeted and programmed are:</p>													
(TOA, \$ in Millions)													
OSIP No.	Description	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
109-87	Block Upgrade I (S-3A)	990.5	0.5	1.3									992.3
39-94	UHF/VHF Comm. Impr. Prog.	14.3	1.5	4.3	4.5	22.8	18.1	18.0	19.4	21.7	2.5		127.0
12-95	Critical Structures	5.5	3.0	10.9	10.2	8.8	12.5	9.8	6.7	4.2	2.6		74.1
13-95	Global Positioning System	6.2	5.7	6.3	2.7	0.2							21.2
20-95	Critical Avionics Upgrade	39.3	14.9	19.1	21.7	49.3	25.3	19.6	18.5	18.4	14.5	4.5	245.2
4-96	Co-Processor Memory Unit	4.3	4.0	9.5	6.4	13.0	7.1	5.7	3.4	0.3	0.4		54.0
TOTAL		1060.0	29.6	51.4	45.5	94.1	63.0	53.1	48.0	44.6	19.9	4.5	1513.8

Totals may vary due to rounding

MODIFICATION TITLE: S-3 Block Upgrade I (OSIP 109-87)

MODELS OF SYSTEM AFFECTED: S-3A

TYPE MODIFICATION: Operational Improvement

DESCRIPTION/JUSTIFICATION:

Weapon System Improvement Program (WSIP): The WSIP is a modification program designed to improve the mission system effectiveness of the carrier based S-3A to meet current and projected threats. The modification includes incorporation of the advanced signal processor, increased sonobuoy receiver and reference system capabilities, an improved tape recorder, inverse synthetic aperture radar (ISAR), electronics support measures (ESM) improvements, HARPOON missile and chaff/flare/expendable jammer dispensers.

Display Generator Unit (DGU): The DGU (CV-2806/ASA-82) of the tactical display system in the S-3A aircraft is unreliable and is becoming unsupportable due to obsolescence. The new design uses fewer components, has reduced power consumption requiring less cooling and is more reliable.

Inter-Communication System (ICS) Communication Control Group: The ICS Communication Control Group (CCG) presently installed in the S-3A has consistently been unreliable resulting in a high percentage of operationally degraded aircraft. These sets of equipment will be replaced by an ICS communications control group of new design. This new set features newer technology large scale integration and microprocessor technology.

Off Line On Top Position Indicator (OTPI): The S-3 presently uses a derivative of the on-line sonobuoy reference system (SRS) which has a mean time between failure (MTBF) of 125 hours and is susceptible to two different single point failure modes. The addition of this modification (which has a 1,100-hour MTBF in P-3C) will significantly contribute to ASW mission capability and improve full mission capable (FMC) rates by 3%.

General Purpose Digital Computer (GPDC) Memory Stack Replacement: Mated wire film memory stacks in the GPDC experienced an increased failure due to copper chloride corrosion. In addition, the original GPDC memory capacity degraded the S-3's operational growth capability and compatibility with advanced sonobuoys and processors. Each of these problems is resolved by a form, fit, and function replacement memory which is not susceptible to corrosion and provides high reliability and additional memory capacity to meet future capability requirements.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

S-3A Weapon System Improvement Program (Redesignated S-3B): Department of the Navy systems and acquisition review council Milestone IIB review occurred 24 February 1981. The Navy decision coordination paper, WO489-AS revision 4, was approved by the Office of the Secretary of Defense on 25 May 1988. The test and evaluation master plan, NO. 149-1 revision 3, was approved by the Office of the Secretary of Defense on 29 August 1989. Research, Development, Test and Evaluation, Navy (RDT&E,N) program element number 64217N applies. Major milestones include the development testing (DT-IIA) (December 1984), DT-IIB (January 1985), operational testing (OT-IIA) (February-March 1985), milestone IIIA approval for limited production (ALP), granted in July 1985, technical evaluation (DT-IID) (November 1985-April 1986), DT-IIE (April 1987-November 1987), and operational evaluation (OPEVAL) (OT-IIB) (December 1987-March 1988). Milestone IIIB approval for limited production (ALP) for FY 1987 was granted in April 1987. Milestone IIIC approval for full production (AFP) was granted June 1988. The S-3B INSURV final phase DT III testing was conducted from December 1988 to May 1989. FOT&E (OT-IIIA) was completed in November 1989. The final report was submitted in July 1990.

Display Generator Unit (DGU): Navy testing was completed in the first quarter of FY 1985. AFP was not required. Delivery of production units began in May 1987. Procurement has been completed.

ICS Communications Control Group: An Aeronautical Equipment Reliability Maintainability Improvement Program (AERMIP) for development of the new communication control group was managed by the Naval Air Development Center, Warminster, PA. ALP was granted in October 1987. OPEVAL was completed 6 Nov 1992. AFP was granted 17 March 1993. RDT&E,N program element number 25633N and project number W1041 apply.

Off Line On Top Position Indicator (OPTI): Development was completed for the Australian Air Force's P-3C aircraft by Hazeltine Corporation using the AN/ARR-78 99-channel receiver and a new control panel for sonobuoy location. This system applies directly to S-3B configuration changes which incorporate the AN/ARR-78. AFP was not required.

General Purpose Digital Computer (GPDC) Memory Stack Replacement: Two advanced development models were developed and validated. These units were transferred to the Canadian Armed Forces for further refinement into engineering development models which incorporate U.S. Navy requirements. U.S. Navy development testing was completed in April 1987. The test kits operated a total of 3,000 hours (300 flights) without failure. AFP was not required. Delivery of production units began in March 1988. Procurement has been completed.

MODIFICATION TITLE: S-3 Block Upgrade I (OSIP 109-87)

MODELS OF SYSTEM AFFECTED: S-3A

TYPE MODIFICATION: Operational Improvement

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Airframe	116	48.3																					116	48.3	
Antenna	121	4.1																					121	4.1	
PDP/OL-320	83	47.2																					83	47.2	
GPDC/AYK-10	24	1.4																					24	1.4	
SRS/ARS-4	24	3.5																					24	3.5	
ATR/AQH-7	24	3.8																					24	3.8	
Radar/APS-137	24	16.9																					24	16.9	
ESM/ALR-76	24	24.8																					24	24.8	
CHAFF/ALE-39	24	.5																					24	.5	
HACLCS/AWG-19	2	.4																					2	.4	
UDG	146	11.2																					146	11.2	
OPTI	120	.6																					120	.6	
CCG	116	1.4																					116	1.4	
Installation Kits N/R		85.6																						85.6	
Installation Equipment																									
PDP/OL-320	38	19.7																					38	19.7	
GPDC/AYK-10	97	5.2																					97	5.2	
SRS/ARS-4	97	12.0																					97	12.0	
ATR-AQH-7	97	9.5																					97	9.5	
RADAR/APS-137	97	64.1																					97	64.1	
ESM/ALR-76	97	78.4																					97	78.4	
CHAFF/ALE-39	121	2.9																					121	2.9	

MODIFICATION TITLE: S-3 Block Upgrade I (OSIP 109-87)

MODELS OF SYSTEM AFFECTED: S-3A

TYPE MODIFICATION Operational Improvement

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
HACLCS/AWG-19	119	12.4																					119	12.4
APS-UYS-1	121	63.7																					121	63.7
SRX-ARR-78	121	44.6																					121	44.6
DMU	36	6.7																					36	6.7
Install Support		6.4																						6.4
UDG	116	16.5																					116	16.5
OTPI	120	.5																					120	.5
GPDC	146	13.3																					146	13.3
CCG	116	32.0																					116	32.0
Installation Equipment N/R		19.8																						19.8
Engineering Change Orders		.1																						.1
Data		18.1																						18.1
Training Equipment		116.6																						116.6
Support Equipment		108.8																						108.8
ILS		9.8																						9.8
Other Support		72.8		.1		.4																		73.4
Interim Contractor Support																								
Installation Cost	77	6.9	5	.4	34	.9																	116	8.2
TOTAL PROCUREMENT	2,387	990.5		.5		1.3																	2,387	992.3

Notes:

1. Totals do not add due to rounding
2. Asterisk indicates amount less than 51K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: S-3A - CCG/OTPI MODIFICATION TITLE: S-3 Block Upgrade I (OSIP 109-87) CCG/OTPI

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: NADEP Field Mod Team

ADMINISTRATIVE LEADTIME: _____ Months PRODUCTION LEADTIME: _____ Months

CONTRACT DATES: FY 1998: _____ FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (116) kits	77	1.6	5	.2	34	.7																		116	2.5
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	77	1.6	5	.2	34	.7																		116	2.5

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	82	18	12	4																					
Out	82	18	12	4																					

	FY 2004				FY 2005				TO COMPLETE	TOTAL
	1	2	3	4	1	2	3	4		
In										116
Out										116

MODIFICATION TITLE: Ultra High Frequency (UHF) / Very High Frequency (VHF) Communications Improvement Program (CIP) (OSIP 39-94)

MODELS OF SYSTEM AFFECTED: S-3B

TYPE MODIFICATION: Operational Improvement

DESCRIPTION/JUSTIFICATION:

The S-3B has an operational requirement for reliable UHF and VHF communications. The current UHF radio (AN/ARC-156) suffers from serious reliability and obsolescence problems, and lacks the internal intermodulation protection required for proper operation in today's operational environment. The AN/ARC-187 UHF radio to be installed is a derivative of the AN/ARC-164 which is presently utilized by the Air Force and would correct the above mentioned deficiencies. The installation also permits compatibility with the JCS requirements for UHF Satellite Communications (SATCOM) users. The radio is common with the P-3C and ES-3A aircraft and this commonality will significantly reduce logistic support requirements. The S-3B does not currently have a VHF radio, which is required by International Air Traffic Control regulations and represents a potential safety flight problem when operating in international airspace and with foreign air fields. The AN/ARC-182 is the Navy's standard VHF radio for tactical aircraft and provides the VHF capability required. One AN/ARC-182 radio will be installed in 113 S-3B aircraft. This modification is validated in ORD 393-88-95, approved 23 Mar 95. S-3B ECP#423 constitutes the CIP integration, and Communication Control Group (CCG) modification.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

The AN/ARC-182 has Approval for Full Production (AFP), and will be verified in the S-3B with trial kit installation (TKI). The AN/ARC-187 installation was verified in the S-3B with Trial Kit Installation. Milestone III Approval for Full Production for S-3B Communications Improvement Program was granted on 23 June 1995.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
RDT&E																										
PROCUREMENT																										
Installation Kits																										
PROTOTYPE/TKI	2	1.8																						2	1.8	
CIP A Kit							5	1.1	25	5.8	17	4.1	18	4.5	22	5.7	24	6.6						111	27.9	
Installation Kits N/R		9.5				1.2																			10.7	
Installation Equipment																										
ARC-182 - R/T & Mount	2	**					5	*	25	.1	17	.1	18	.1	22	.1	24	.2						113	.6	
MD-1324 Modem	2	**					5	.2	25	.9	17	.7	18	.7	22	1.0	24	1.1							113	4.5
Crypto Fill Panels	2	**		*			5	*	25	.1	17	.1	18	.1	22	.1	24	.1							113	.5
CCG Modification	2	**					5	1.1	25	5.6	17	3.9	18	4.2	22	5.5	24	6.3							113	26.6
ARC-187 - B Kit (2 per A/C)	2	.4					5	0.9	25	4.4	17	3.1	18	3.3	22	4.3	24	5.0							113	21.4
Installation Equipment N/R																										
Engineering Change Orders																										
Data		.3				.2		.1																	.6	
Training Equipment		.1				.2			4	4.0	2	2.1	3	2.8											9	9.2
Support Equipment										.7	.3															1.0
ILS		1.3		*				.2																		1.5
Other Support		.9		1.1		2.4		.9		.7	.7		.3		.5		.2									7.8
Interim Contractor Support																										
Installation Cost				1	.4	1	.2			5	.4	29	2.9	19	2.0	21	2.2	22	2.1	24	2.5				122	12.8
TOTAL PROCUREMENT	12	14.3		1.5		4.3	30	4.5	154	22.8	104	18.1	111	18.0	132	19.4	144	21.7							687	127.0

Notes:

1. Totals do not add due to rounding
2. Asterisk indicates amount less than 51K ** AN/ARC-182 radios to be obtained from F/A-18 or other aircraft installing AN/ARC-210 radios.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: S-3B

MODIFICATION TITLE: UHF/VHF Communications Improvement Program (OSIP 39-94)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Team

ADMINISTRATIVE LEADTIME: 6 Months

PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 1998: _____ FY 1999: 3/99 FY 2000: 3/00

DELIVERY DATE: FY 1998: _____ FY 1999: 3/00 FY 2000: 3/01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 1998 & PY (2) kits			1	.4	1	.2																	2	.6
FY 1999 (5) kits									5	.4													5	.4
FY 2000 (29) kits											29	2.9											29	2.9
FY 2001 (19) kits													19	2.0									19	2.0
FY 2002 (21) kits															21	2.2							21	2.2
FY 2003 (22) kits																	22	2.1					22	2.1
FY 2004 (24) kits																			24	2.5			24	2.5
FY 2005 () kits																								
To Complete () kits																								
TOTAL **			1	.4	1	.2			5	.4	29	2.9	19	2.0	21	2.2	22	2.1	24	2.5			122	12.8

** Includes trainer install(s).

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	1			1						1	2	2	8	7	7	7	5	5	5	4	6	5	5	5	
Out	1			1						1	2	2	8	7	7	7	5	5	5	4	6	5	5	5	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	6	6	5	5	7	7	7	3		122
Out	6	6	5	5	7	7	7	3		122

INDIVIDUAL MODIFICATION

MODIFICATION TITLE: Critical Structures (OSIP 12-95)

MODELS OF SYSTEM AFFECTED: S-3B

TYPE MODIFICATION: SLEP

DESCRIPTION/JUSTIFICATION:

S-3 aircraft are included in the Naval Aviation Plan to support the carrier Battle Group through CY 2015. The S-3A aircraft was procured from 1972 to 1976 (1960's design/avionics technology), based on ORD #0927-AS dated 25 Mar 77. The S-3B Weapons System Improvement Program, which modified the S-3A to an S-3B, focused primarily on weapon system upgrades for mission enhancement and did not upgrade the critical airframe safety of flight avionics systems. This upgrade is a series of modifications required in order to ensure effective, safely flyable aircraft through the year 2015. Specifically, the Critical Structures Upgrade modification includes replacement of the windshield temperature controller and the following airframe components: wingfold rib, horizontal stabilizer hinge fitting, flight control elements, fuel flow/bleed air select vent valves, counterweights, and flap track ribs. The Service Life Assessment Program (SLAP) (FY98) will certify that the fatigue and operational loads of the aircraft are accurately represented in the full scale reaction frame. Service Life Extension Program (SLEP) recurring will incorporate the necessary structural upgrades beyond those under Critical Structures Upgrade modifications to extend the aircraft service life to 2015.

PAINTLESS REPLACEMENT APPLIQUE: S-3B Paintless Applique serves as a replacement top coat for the current primer/paint combination. Applique film (flouropalmer sheets with pressure sensitive adhesives) have the potential to replace paint as a top coat, reduce hazardous waste and save the Navy considerably in operability, sustainability and maintenance costs over the S-3 life cycle.

RECURRING KIT STATUS: The Critical Structures Airframe kit (consisting of horizontal stabilizer hinge fitting - ECP AL-808, counterweights - ECP AL-802, flap track ribs - ECP AL-796, and flow/bleed air select vent valves ECP AL-789), the Flight Control Elements kit, - ECP-AL807-R1 and the Inner Wing Empennage Kit for all 98 S-3B aircraft. The Wingfold Rib kit is required for 17 of the S-3B aircraft.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Replacement of the airframe components/windshield temperature controller does not require any development. Non-recurring engineering for all five components were completed in Fy 1995 with the first production buy began in FY 1996 and with installs commencing in FY 1997. The non-recurring engineering required for the Service Life Extension Program (SLEP) include: the finite element model, wing rib replacement program, the fatigue article teardown, and post test analysis will be accomplished by FY 2000.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL				
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$			
RDT&E - H2452								23.6		14.2		4.7													42.6		
PROCUREMENT																											
Installation Kits																											
Critical Structures Airframe	10	.2	10	.2	20	.7	20	.7	24	.9	24	1.0	5	.2											113	4.0	
Flight Controls Elements	13	.4	13	.4	13	.4	13	.4	13	.4	13	.4	13	.4	13	.4	9	.3								113	3.6
Inner Wing Empennage kit							20	.3	20	.3	20	.3	20	.3	20	.3	13	.2								113	1.5
Paintless Applique									19	.6	19	.6	19	.6	19	.6	19	.6	18	.6						113	3.5
Wingfold Rib									8	2.1	5	1.3	4	1.2												17	4.6
Installation Kits N/R		3.7				7.0		5.1																			15.8
Installation Equipment																											
Installation Equipment N/R																											
Engineering Change Orders																											
Data		.2		*																							.2
Training Equipment		.1		*		*		*		*																	.2
Support Equipment																											
ILS		.1																									.1
Other Support		.6		.3		1.0		1.1		.9		.5		.5		.6		.9		.3							6.9
Interim Contractor Support																											
Installation Cost			10	1.9	10	1.8	20	2.5	20	3.6	24	8.4	24	6.6	5	4.8		2.3		1.7						113	33.6
TOTAL PROCUREMENT	23	5.5	23	3.0	33	10.9	53	10.2	84	8.8	81	12.5	61	9.8	52	6.7	41	4.2	18	2.6						469	74.1

Notes:

1. Totals do not add due to rounding
2. Asterick indicates amount less than 51K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: S-3B

MODIFICATION TITLE: Critical Structures (OSIP 12-95)
Inner Wing Empennage Kit

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: NADEP Field Mod Team

ADMINISTRATIVE LEADTIME: 4 Months

PRODUCTION LEADTIME: 9 Months

CONTRACT DATES: FY 1998: 1/98

FY 1999: 1/99

FY 2000: 1/00

DELIVERY DATE: FY 1998: 10/98

FY 1999: 10/99

FY 2000: 10/00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 (20) kits									20	.2														20	.2
FY 2000 (20) kits											20	.3												20	.3
FY 2001 (20) kits													20	.3										20	.3
FY 2002 (20) kits															20	.3								20	.3
FY 2003 (20) kits																	20	.3						20	.3
FY 2004 (13) kits																			13	.2				13	.2
FY 2005 () kits																									
To Complete () kits																									
TOTAL									20	.2	20	.3	20	.3	20	.3	20	.3	13	.2			113	1.6	

Installation Schedule

	FY 1997	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	& Prior	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In									5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
Out										5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	5	5	5	5	4	3	3	3		113
Out	5	5	5	5	5	4	3	3	3	113

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: S-3B

MODIFICATION TITLE: Critical Structures (OSIP 12-95)
Flight Control Elements

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: NADEP Field Mod Team

ADMINISTRATIVE LEADTIME: 4 Months

PRODUCTION LEADTIME: 9 Months

CONTRACT DATES: FY 1998: 1/98

FY 1999: 1/99

FY 2000: 1/00

DELIVERY DATE: FY 1998: 10/98

FY 1999: 10/99

FY 2000: 10/00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (39) kits			13	1.2	13	1.1	13	1.1																39	3.3
FY 1999 (13) kits									13	1.1														13	1.1
FY 2000 (13) kits											13	1.1												13	1.1
FY 2001 (13) kits													13	1.1										13	1.1
FY 2002 (13) kits															13	1.0								13	1.0
FY 2003 (13) kits																	13	1.1						13	1.1
FY 2004 (9) kits																			9	.7				9	.7
FY 2005 () kits																									
To Complete () kits																									
TOTAL			13	.0	13	1.1	13	1.1	13	1.1	13	1.1	13	1.1	13	1.0	13	1.1	9	.7				113	9.5

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	13	3	3	3	4	3	3	3	4	3	3	3	4	3	3	3	4	3	3	3	4	3	3	3	4
Out		2	5	6	3	3	3	4	3	3	3	4	3	3	3	4	3	3	3	4	3	3	3	4	3

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	3	3	3	4	3	3	3			113
Out	3	3	4	3	3	3	4	3	6	113

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: S-3B

MODIFICATION TITLE: Critical Structures (OSIP 12-95)
Wingfold Rib

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: NADEP Field Mod Team

ADMINISTRATIVE LEADTIME: 4 Months

PRODUCTION LEADTIME: 9 Months

CONTRACT DATES: FY 1998: _____ FY 1999: _____ FY 2000: 4/00

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: 1/01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 () kits																									
FY 2000 (8) kits											8	4.4												8	4.4
FY 2001 (5) kits													5	2.8										5	2.8
FY 2002 (4) kits															4	2.3								4	2.3
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL												8	4.4	5	2.8	4	2.3							17	9.6

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In														2	3	3			2	2	1			2	1	1
Out																	2	3	3			2	2	1		

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										17
Out	2	1	1							17

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: S-3B

MODIFICATION TITLE: Critical Structures (OSIP 12-95)
Critical Structures Airframe Kit

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Team

ADMINISTRATIVE LEADTIME: 4 Months

PRODUCTION LEADTIME: 9 Months

CONTRACT DATES: FY 1998: 1/98 FY 1999: 1/99 FY 2000: 1/00

DELIVERY DATE: FY 1998: 10/98 FY 1999: 10/99 FY 2000: 10/00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (40) kits			10	.7	10	.7	20	1.4																40	2.7
FY 1999 (20) kits									20	1.5														20	1.5
FY 2000 (24) kits											24	1.8												24	1.8
FY 2001 (24) kits													24	1.5										24	1.5
FY 2002 (5) kits															5	.3								5	.3
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL			10	.7	10	.7	20	1.4	20	1.5	24	1.8	24	1.5	5	.3								113	7.9

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	10	2	2	3	3	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	2	2	1	
Out	5	5	2	2	3	3	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	2	2	2	1

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										113
Out										113

MODELS OF SYSTEMS AFFECTED: S-3B

MODIFICATION TITLE: Critical Structures (OSIP 12-95)
Paintless Applique

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Team

ADMINISTRATIVE LEADTIME: 3 Months

PRODUCTION LEADTIME: 3 Months

CONTRACT DATES: FY 1998: _____ FY 1999: _____ FY 2000: 1/00

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: 3/00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 () kits																									
FY 2000 (19) kits									19	.8														19	.8
FY 2001 (19) kits											19	.8												19	.8
FY 2002 (19) kits													19	.8										19	.8
FY 2003 (19) kits															19	.8								19	.8
FY 2004 (19) kits																	19	.8						19	.8
FY 2005 (18) kits																			18	.8				18	.8
To Complete () kits																									
TOTAL									19	.8	19	.8	19	.8	19	.8	19	.8	18	.8				113	4.8

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In										7	6	6		7	6	6		7	6	6		7	6	6	
Out										7	6	6		7	6	6		7	6	6		7	6	6	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In		7	6	6		6	6	6		113
Out		7	6	6		6	6	6		113

MODIFICATION TITLE: Global Positioning System (GPS) (OSIP 13-95)

MODELS OF SYSTEM AFFECTED: S-3B

TYPE MODIFICATION: Operational Improvement / Safety

DESCRIPTION/JUSTIFICATION:

The S-3B aircraft is currently using Tactical Air Navigation (TACAN) / Inertial Navigation Systems (INS) as a navigation aid. Chief of Naval Operations (CNO) has mandated GPS as a replacement for TACAN. FAA certifiable GPS/Radio Navigation (RNAV) capability is required for the S-3B. GPS modification will provide increased operational capability and mission effectiveness by providing precise navigation position information to the flight crew for Anti-Submarine Warfare (ASW) / Anti-Surface Warfare (ASUW) prosecutions, mine warfare and on scene tactical coordination and turnover with other ASW/ASUW platforms. Trainer procurement is for Weapons Systems Trainer (WST) / Position Trainer Complex Module (PTCM) and maintenance trainer A kits; B kits will be procured under Common Avionics GPS OSIP 72-88. This effort was originally approved under Operational Requirements Document #OR-927-AS dated 27 Mar 77. The ECP for this effort is LMAS 53-421R1 which will modify 115 aircraft

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

The GPS (B Kit) has completed TECHEVAL/OPEVAL. This OSIP is for installation of the user equipment in the S-3B. TKI completed May 1996. Installation D/T TECHEVAL for the S-3B was completed June 1996. Production contract was awarded July 1996. Follow-on contract for Lots 3 & 4 was awarded June 98.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits	25	1.4	33	1.8	57	3.6																		115	6.8
Installation Kits N/R																									
Installation Equipment																									
GFE(AN/ARN 153)	25	1.1	33	.8	39	1.1	16	0.4																113	3.5
LAB (Includes A & B Kits)		.1																							0.1
Installation Equipment N/R																									
Engineering Change Orders				.1																					0.1
Data		.6		0.1																					0.7
Training Equipment		2.3		0.1																					2.3
Support Equipment				*																					
ILS		.8		0.1																					0.9
Other Support				0.8		0.8		0.7		0.2															2.4
Interim Contractor Support																									
Installation Cost			25	1.8	33	.9	55	1.7																113	4.4
TOTAL PROCUREMENT	50	6.2	66	5.7	96	6.3	16	2.7		.2														230	21.2

Notes:

1. Totals do not add due to rounding.
2. Asterisk indicates amount less than 51K.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: S-3B MODIFICATION TITLE: Global Positioning System (GPS) (OSIP 13-95)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: NADEP Field Mod Team

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 1998: 6/98 FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: 1/99 FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (113) kits			25	1.8	33	1.4	55	1.7																113	4.4
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL			25	1.8	33	1.4	55	1.7																113	4.4

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	25	8	8	8	9	14	14	14	13																
Out	9	9	7	8	8	8	9	14	14	14	13														

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										113
Out										113

MODIFICATION TITLE: S-3 Critical Avionics Upgrade (OSIP 20-95)

MODELS OF SYSTEM AFFECTED: S-3B

TYPE MODIFICATION: Operational Improvement/Obsolescence

DESCRIPTION/JUSTIFICATION:

This program replaces the Automatic Flight Control Systems (AFCS), Inertial Navigation Systems (INS), Flight Instruments, Mission Displays, and Armament Control Systems (ARMCOS) which have become significant obsolescence/non-supportability degraders for the S-3B aircraft. Modification of these critical avionics systems will ensure respective system operation and availability for the current and projected (2015) service life of the airframe. Trainer procurement is to incorporate all four systems into the S-3B Fleet Weapons Systems Trainers (WST), Position Trainer Complex Modules (PTCM) and Maintenance Trainers. The requirement for these modifications is described in Operational Requirements Document (ORD) 408-88-95 dated 13 July 95.

DIGITAL FLIGHT DATA COMPUTER (DFDC) (Engineering Change Proposal (ECP) 426): The Flight Data Computer (FDC) is the central computing component of the Automatic Flight Control System (AFCS). The present obsolete FDC is subject to failure modes which have been demonstrated to cause uncommanded roll input to the flight control system. This modification will be installed in all of the existing 113 S-3B aircraft.

CARRIER AIRCRAFT INERTIAL NAVIGATION SYSTEM (CAINS II); EMBEDDED Global POSITIONING SYSTEM (GPS) INERTIAL (EGI); ELECTRONIC FLIGHT INSTRUMENTS (EFI) (ECP 427): This is a replacement program for the S-3B navigation, heading and attitude system, and associated flight instruments. The existing system has become increasingly non-supportable due to parts obsolescence and material condition of the chassis and internal wiring. Replacement avionics hardware consists of a CAINS II, an EGI, four new EFIs for the cockpit, and 1553B digital Navigation Interface Unit (NIU) which connects the flight instruments to the navigation system bus and mission computer. The CAINS II and the EGI provide the two required heading platform stabilization sources necessary for embarked operations or night/instrument flight. This modification will be installed in all of the existing 113 S-3B aircraft.

STORES MANAGEMENT SYSTEM (SMS)(ECP XXX (not yet assigned)): This modification provides a functional replacement of the Armament Control Panel, Bomb Bay/Wing Decoders and wiring that comprise the current S-3 Armament Control System (ARMCOS) with an NDI digital Stores Management System (SMS) including small circular error probability weapon. An operable SMS is required for loading, carriage and/or jettison of any internal or external stores including the Aerial Refueling Store, torpedoes, and/or Harpoon. This modification will be installed in all of the existing 113 S-3B aircraft.

DISPLAYS (ECP XXX (not yet assigned)): This program replaces obsolete/non-supportable Cathode Ray Tube (CRT) Multi-Purpose Displays (MPDs). Current mission displays are adversely impacting readiness due to poor reliability, high failure rate, and the inability to repair or replace inoperable CRT's. These displays are critical to all missions due to the integration of all mission subsystems, including navigation, through the General Purpose Digital Computer System. Replacement will incorporate NDI display systems. This modification will be installed in 65 of the existing 113 S-3B aircraft.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Milestone III decision for Critical Avionics Upgrade approved Oct 1995. DFDC hardware CDR held SEP 96, software CDR held MAY 97, EDM testing commenced DEC 97. CAINS/EGI/EFI system CDR held OCT 97, prototype install commenced July 1998. RFP for SMS released May 1998. Displays CDR commenced June 1998.

MODIFICATION TITLE: S-3 Critical Avionics Upgrade (OSIP 20-95)

MODELS OF SYSTEM AFFECTED: S-3B

TYPE MODIFICATION: Operational Improvement/Obsolescence

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits ***																									
SMS (ARMCOS)							2 ***		6	.3	5	.3	12	.7	21	1.3	32	2.1	28	2.2	9	.7	113	7.7	
CAINS/EFI/NIU			2 ***		17	3.1	4	0.6	47	7.6	17	2.8	13	2.1	9	1.5	6	1.0					113	18.6	
Installation Kits N/R		7.3		4.3				1.7																13.3	
Installation Equipment																									
DFDC	11 ***	1.0	12	1.1	12	1.0	18	2.0	18	2.0	21	2.4	18	2.1	5	.6							113	12.1	
CAINS			2 ***		17	6.9	4	1.9	47	19.4	17	6.6	13	5.1	9	3.6	6	2.1					113	45.5	
SMS (ARMCOS)							2 ***		6	1.9	5	1.6	12	3.9	21	7.0	32	10.7	28	9.6	9	3.1	113	37.8	
DISPLAYS									10	1.1	11	1.2	10	1.1	15	1.7	9	1.1	10	1.2			65	7.5	
Installation Equipment N/R		18.1		4.2				3.8		3.2														29.2	
Engineering Change Orders																									
Data						.3		.5		.3														1.0	
Training Equipment		.2				.4		4.0		6.6		4.4		1.8		.9								18.3	
Support Equipment																									
ILS		1.0		.3				.1		.7		.3												2.3	
Other Support		11.8		5.1		7.6		5.9		5.1		1.7		.5		.4		.3		.3				38.7	
Interim Contractor Support																									
Installation Cost						*		1.1		1.1		4.0		2.3		1.5		1.3		1.1		.7		13.1	
TOTAL PROCUREMENT	11	39.3	15	14.9	46	19.1	30	21.7	134	49.3	76	25.3	78	19.6	80	18.5	85	18.4	66	14.5	18	4.5	630	245.2	

Notes:

1. Totals do not add due to rounding
 2. Asterisk indicates amount less than 51K
- *** One (1) Prototype and one (1) Trial Kit Installation (TKI) procured via NRE will be installed in fleet aircraft bringing total aircraft to 113. The two remaining kits will be installed in trainers.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: S-3B

MODIFICATION TITLE: S-3 Critical Avionics Upgrade (OSIP 20-95) SMS (ARMCOS)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Team

ADMINISTRATIVE LEADTIME: 4 Months

PRODUCTION LEADTIME: 19 Months

CONTRACT DATES: FY 1998: _____ FY 1999: _____ FY 2000: 12/99

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: 6/01

(in millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 (2) kits									2	***														2	***
FY 2000 (6) kits											6	.4											6	.4	
FY 2001 (5) kits													5	.3									5	.3	
FY 2002 (12) kits															12	.5							12	.5	
FY 2003 (21) kits																	21	.6					21	.6	
FY 2004 (32) kits																			32	.6			32	.6	
FY 2005 (28) kits																					28	.6	28	.6	
To Complete (9) kits																					9	.2	9	.2	
TOTAL									2	***	6	.4	5	.3	12	.5	21	.6	32	.6	37	.7	115	3.2	

*** Includes one (1) Prototype and one (1) TKI.

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In												2			3	3	1	1	1	2	3	3	3	3	
Out												2			2	3	2	1	1	2	3	3	3	3	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	6	5	5	5	8	8	8	8	37	115
Out	6	5	5	5	8	8	8	8	37	115

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: S-3B MODIFICATION TITLE: S-3 Critical Avionics Upgrade (OSIP 20-95) CAINS II

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: FY 97 prototype/TKI was procured as contractor "turn-key". FY 98 and out are Contractor Field Mod Team (Airframe Block).

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 1998: 1/98 FY 1999: 1/99 FY 2000: 1/00

DELIVERY DATE: FY 1998: 1/99 FY 1999: 1/00 FY 2000: 1/01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (19) kits			2	***			17	1.1																19	1.1
FY 1999 (4) kits									4	1.1														4	1.1
FY 2000 (47) kits											47	3.6												47	3.6
FY 2001 (17) kits													17	1.9										17	1.9
FY 2002 (13) kits															13	1.0								13	1.0
FY 2003 (9) kits																	9	.8						9	.8
FY 2004 (6) kits																			6	.4				6	.4
FY 2005 (0) kits																					6	.4			
To Complete (0) kits																									
TOTAL			2	***			17	1.1	4	1.1	47	3.6	17	1.9	13	1.0	9	.8	6	.4				115	9.9

*** Includes one (1) Prototype and one (1) TKI.

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	2						6	6	5	1	1	1	1	12	12	12	11	4	4	4	5	4	3	3	3
Out	2							6	6	5	1	1	1	1	12	12	12	11	4	4	4	5	4	3	3

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	3	2	2	2	3	3				115
Out	3	3	2	2	2	3	3			115

MODIFICATION TITLE: Co-Processor Memory Unit (OSIP 04-96)MODELS OF SYSTEM AFFECTED: S-3BTYPE MODIFICATION: Operational Improvement

DESCRIPTION/JUSTIFICATION:

The Co-Processor Memory Unit (CPMU) replaces the S-3B MMU-576 Drum Memory Storage (DMS) Unit, the OL-230 Post and Display Processor (PDP) and the AN/AYK-10 General Purpose Digital Computer (GPDC). The Operational Requirements Document (ORD) # OR-927-AS was approved 27 Mar 77. The reliability, maintainability, and obsolescence of the DMS, PDP, and GPDC has degraded to levels which significantly hinder the ability to meet aircraft tactical mission requirements. The CPMU fully emulates the DMS and replaces 5 WRA's, resulting in significant space/weight savings. CPMU incorporates an open architecture design as a foundation for future processor growth. CPMU will host a mission program written in ADA software language (RDT&E funded). Trainer procurement is for both Weapons System Trainers (WST) / Position Trainer Complex Module (PTCM) and maintenance trainers A and B kits. The ECP for this effort is Loral AYK-23-002 which modifies 65 systems.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

The Co-Processor Memory Unit (CPMU) program was initiated as a joint U.S. Navy/Canadian industrial base development effort in 1991. A competitive development contract was awarded in FY 1992. Installation of EDM was completed in April 1995. Approval for LRIP was received in June 1996. LRIP production contract was awarded in June 1996. TKI commenced August 1998. Milestone III decision is planned for February 1999.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E (H0489)		12.0		8.0		2.0		4.4		2.1		0.5		0.5		0.5		0.5		0.5					30.0
PROCUREMENT																									
Installation Kits	2	*	3	*	12	.2	10	.2	22	.4	7	.2	7	.2	2	.1								65	1.2
Installation Kits N/R		.1																							.1
Installation Equipment	2	1.3	3	1.8	12	5.0	10	4.7	22	10.1	7	3.7	7	3.7	2	1.2								65	32.5
Installation Equipment N/R		2.2		1.3																					3.6
Engineering Change Orders																									
Data				.1		.3												*							.3
Training Equipment		.5		*		.1			1.5		2.2		.6		*										4.8
Support Equipment				.1																					.1
ILS				.1		.2		.2		.1		.1		.1		.2		*							1.0
Other Support		.1		.5		2.7		1.1		.6		.6		.4		1.2		*		.4					7.6
Interim Contractor Support																									
Installation Cost					2	.1	12	.2	10	.3	16	.5	13	.7	8	.7	2	.1						65	2.7
TOTAL PROCUREMENT	4	4.3	6	4.0	26	9.5	32	6.4	54	13.0	30	7.1	27	5.7	12	3.4	2	.3		.4				195	54.0

Notes:

1. Totals do not add due to rounding
2. Asterisk indicates amount less than 51K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: S-3B MODIFICATION TITLE: Co-Processor Memory Unit (OSIP 04-96)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Field Mod Team

ADMINISTRATIVE LEADTIME: 11 Months PRODUCTION LEADTIME: 16 Months

CONTRACT DATES: FY 1998: 2/98 FY 1999: 8/99 FY 2000: 8/00

DELIVERY DATE: FY 1998: 4/99 FY 1999: 12/00 FY 2000: 12/01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL					
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$				
FY 1998 & PY (17) kits					2	.1	12	.2	3	0.1														17	.3			
FY 1999 (10) kits									9	.0	1	*													10	.0		
FY 2000 (22) kits											15	.5	7	0.4												22	.5	
FY 2001 (7) kits													6	.4	1	0.1											7	.4
FY 2002 (7) kits															7	.6											7	.6
FY 2003 (2) kits																	2	.1									2	.1
FY 2004 () kits																												
FY 2005 () kits																												
To Complete () kits																												
TOTAL					2	.1	12	.2	12	.0	16	.5	13	.4	8	.7	2	.1							65	2.7		

* indicates amount less than 51K.

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In				1	1	3	3	3	3	3	3	3	3	4	4	4	4	4	3	3	3	2	2	2	2
Out				1	1	4	4	4	3	3	3	3	3	4	4	4	4	4	3	3	3	2	2	2	2

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	2									65
Out	2									65

CLASSIFICATION: **UNCLASSIFIED**

**BUDGET ITEM JUSTIFICATION SHEET
P-40**

Date: **February 1999**

APPROPRIATION/BUDGET ACTIVITY
Aircraft Procurement, Navy/APN-5 Aircraft Modifications

P-1 ITEM NOMENCLATURE
E-2C Series Modification

Program Element for Code B Items:

Other Related Program Elements:

	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
QUANTITY													
COST (In Millions)	744.3		27.1	43.3	83.6	28.2	26.9	14.8	2.9	65.6	65.5	1,099.3	2,201.5

This line item funds modifications to E-2C aircraft. The E-2C is an all weather, carrier based, airborne early warning and command and control aircraft. It extends task force defense perimeters by providing early warning of approaching enemy units and by vectoring interceptors into attack position. Additionally, the HAWKEYE provides strike control, radar surveillance, search and rescue assistance, communications relay and automatic tactical data exchange. The E-2C aircraft design service life is 10,000 flight hours with an average service life remaining through FY 2015. In future years, the E-2C will be a critical element of the Navy's Cooperative Engagement Capability (CEC). To realize efficiencies in cost and scheduling, the HAWKEYE 2000 OSIPs (SATCOM, Vapor Cycle, Mission Computer Upgrade (MCU) and CEC) were consolidated into one engineering change proposal (ECP-418). The efficiencies realized with consolidating HAWKEYE 2000 modifications under ECP-418 were reflected in the FY 1998 budget. Subsequent to establishment of ECP-418, it has become exceedingly difficult to coordinate kit and install quantities, contract dates, and training requirements across the four ECP-418 OSIPs. Beginning in FY 1999 the ECP-418 OSIPs were combined into one new OSIP, 19-99 Block Upgrade III. Consolidation of the OSIPs provides management a concise picture of cost and schedule requirements to modify and field HAWKEYE 2000 aircraft. The specific modifications budgeted and programmed are:

(TOA, \$ in Millions)

OSIP No.	Description	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
121-87	Structural Enhancements	273.8		2.7	1.4	1.2	0.9	0.8	0.8	3.0		2.5	287.0
74-88	Block Upgrade II	308.0	12.1	21.4	34.2	6.9	2.5	11.6	2.1	5.5	5.1	81.1	490.5
87-88	Outer Wing Panels	86.9		8.4	14.9	8.5	19.2					222.4	360.2
21-95	Satellite Communication	40.3	6.7	2.0									49.1
22-95	Replacement Vapor Cycle	35.3											35.3
4-97	Replacement Computer		7.8	5.9									13.7
12-97	Cooperative Engagement Capability		0.5										0.5
1-98	Aircrew Safety & Survival			2.9	3.8	0.9						3.1	10.7
19-99	Block Upgrade III				29.3	10.8	4.3	2.4		57.1	60.4	790.3	954.4
TOTAL		744.3	27.1	43.3	83.6	28.2	26.9	14.8	2.9	65.6	65.5	1,099.3	2,201.5

Note: Totals do not add due to rounding

Exhibit P-3a		INDIVIDUAL MODIFICATION																							
MODIFICATION TITLE:		Structural Enhancements (OSIP 121-87)																							
MODELS OF SYSTEM AFFECTED:		E-2C												TYPE MODIFICATION: Safety											
DESCRIPTION/JUSTIFICATION:																									
<p>Analysis and fatigue test results disclosed that the wing center sections, the nose landing gear brace trunnion fitting, upper longeron splice, main beam lock fitting, lower wing skin fold actuator support fitting, rear beam lower cover splice, and rear beam lower cover skin in E-2C aircraft (A/C) produced prior to A/C #96 would fail due to fatigue prior to 10,000 flight hours. In order to extend the operational life of A/C produced prior to A/C #96, it is necessary to modify these areas. This modification installs an enhanced wing center section into thirty-four (34) aircraft and provides for modification of the drag brace trunnion, longeron splice, main beam lock fitting, lower wing skin fold actuator support fitting, rear beam lower cover splice and skin.</p> <p>The Navy Inventory Control Point (NAVICP) projects an E-2C propeller shortage in FY 2000. As a result, NAVICP approved a Logistics Engineering Change Proposal (LECP) to procure a new eight-blade propeller for the E-2C program office. The LECP funds the non-recurring and the procurement of 187 propellers only. The E-2C program office is responsible for funding the ground/flight test and overall system integration between Northrop Grumman (airframe), Allison (engine) and Hamilton-Standard (propellers). The ground/flight test and prototype propeller kits will be funded with APN-1 funds starting in FY99. Retrofit propeller kits and install will be funded with APN-5 funds beginning in FY 2000 for seventy-five (75) Group II aircraft</p>																									
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:																									
Developmental Component Testing began in November 1998 and is ongoing. Development flight tests for the propeller are scheduled to begin August 1999.																									
FINANCIAL PLAN (TOA, \$ in Millions):																									
	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
ECP 367R1-WCS Enhance.	28	138.6			1	0.3	1	0.3									2	0.5			2	0.5	34	140.2	
Installation Kits N/R		14.3																						14.3	
Installation Equipment																									
ECP XXX-Propellers									25	0.4	25	0.4	25	0.4										75	1.2
Vibration Suppression								0.3																	0.3
Installation Equipment N/R																									
Engineering Change Orders																									
Data		0.8																							0.8
Training Equipment		*																							0.0
Support Equipment		1.4																							1.4
ILS																									
ECP XXX-Propellers						0.4			0.8		0.5		0.1		0.5		0.5								2.7
Other Support		26.2																							26.2
ECP XXX-Propellers						1.2																			1.2
Interim Contractor Support																									
Installation Cost																									
ECP 367R1-WCS Enhance.	28	92.5			1	0.8	1	0.9									2	1.7			2	1.9	34	97.9	
ECP XXX-Propellers													25	0.3	25	0.3	25	0.3						75	0.9
TOTAL PROCUREMENT		273.8				2.7	1.4		1.2		0.9		0.8		0.8		3.0					2.5		287.0	

Exhibit P-3a

Note: Totals do not add due to rounding.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: E-2C **MODIFICATION TITLE:** Structural Enhancements (OSIP 121-87)

INSTALLATION INFORMATION: This installation information is for ECP 367R1-WCS Enhancement Only.

METHOD OF IMPLEMENTATION: Contractor (Turn-Key) Drive-In Modification (DIM).

ADMINISTRATIVE LEADTIME: 2 Months **PRODUCTION LEADTIME:** 12 Months

CONTRACT DATES: FY 1998: 11/97 FY 1999: 11/98

DELIVERY DATE: FY 1998: 11/98 FY 1999: 11/99

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 1998 & PY (29) kits	28	92.5			1	0.8																	29	93.3
FY 1999 (1) kits							1	0.9															1	0.9
FY 2000 (0) kits																								
FY 2001 (0) kits																								
FY 2002 (0) kits																								
FY 2003 (0) kits																								
FY 2004 (2) kits																	2	1.7					2	1.7
FY 2005 (0) kits																								
To Complete (2) kits																				2	1.9	2	1.9	
TOTAL	28	92.5			1	0.8	1	0.9									2	1.7		2	1.9	34	97.9	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	28				1				1																
Out	28					1				1															

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In				2					2	34
Out					2				2	34

Exhibit P-3a	INDIVIDUAL MODIFICATION	
MODIFICATION TITLE:	Block Upgrade II (OSIP 74-88)	
MODELS OF SYSTEM AFFECTED:	E-2C	TYPE MODIFICATION: Mission Performance Enhancement
DESCRIPTION/JUSTIFICATION:		
ECP 400 - "Group I to Group II Configuration" consists of the following items.		
<p>1. Radar Update: The jamming threat to a radar (electronic counter-countermeasures) can be minimized by current antenna technology and/or receiver/modifications. The total radiation aperture control (TRAC-A) antenna (the first major redesign in the 20 year history of the E-2 series) is now in production as the initial step in the evolution of countering a growing threat. These changes will augment the reduced sidelobes of the antenna pattern (increase detection in a jamming environment), provide automated cues to the operators on the best radar mode for different jamming levels and provide directional information of the jamming source for intercept with battle group fighters. Production incorporation was in the last FY86 aircraft (A122). The second phase in the update of the E-2C's radar system is designed to significantly extend its detection range, add automatic environmental processing of targets and eliminate detection losses. Building on existing components of the radar system, one weapons replaceable assembly (WRA) is replaced and eight out of forty WRA's are modified. A new tactical software program is a greatly improved man-machine interface capable of providing the battle group commander in-depth defense throughout the outer-air-battle environment. Production incorporation was in the second FY 1989 aircraft (A/C #140).</p>		
<p>2. Joint Tactical Information Distribution System (JTIDS): The JTIDS is a communication/navigation/identification system which will provide secure, jam resistant communication (both digital and voice tactical data), identification, and a relative navigation function for aircraft and ships. The JTIDS identification and positional data will be integrated into the E-2C central computer program for correlation with data received by on-board sensors. Production incorporation of partial provisions was in the last FY86 aircraft (A122). Production incorporation of final provisions was in the second FY89 aircraft (A140).</p>		
<p>3. Enhanced High Speed Processor (EHSP): E-2C radar and passive detection systems are currently restricted from fully exploiting their available surveillance volume due to computer processing limitations. The EHSP weapons replaceable assembly replaces two memory modules and their associated power supply in the central processor (CP) cabinet. The EHSP increases the CP track capacity four-fold through the dense packaging of current computer technology. This capability is the foundation of extending the radar range in the Radar Update Group II. Production incorporation of the EHSP was in aircraft A134.</p>		
<p>4. NAVSTAR Global Positioning System (GPS): The NAVSTAR GPS is a space based radio positioning and navigation system that will provide three dimensional position, velocity and time information to suitably equipped users anywhere on or near the earth. Production incorporation was in the first FY90 aircraft A145. GPS was an out-of-production installation in aircraft A140 thru A144.</p>		
<p>5. Enhance Displays: The enhanced displays will permit full utilization of all processed tracks using the latest state-of-the-art in man-machine interface. Production incorporation was in the first FY90 aircraft (A145). Enhanced displays were an out-of-production installation in aircraft A140 thru A144.</p>		
<p>6. Improved Identification Friend or Foe (IFF) System: Incorporation of the improved IFF will provide an increased capability to discriminate between friendly forces and potentially hostile target tracks and make room for installation of JTIDS boxes. Production incorporation in USN E-2C was in the second FY89 aircraft (A140).</p>		
ECP 403 - "Navigation Upgrade" consists of the following items:		
<p>1. Standard Automatic Flight Control System (SAFCS) Computer: The AN/ASW-15 automatic flight control system (AFCS) presently installed is an obsolete design using 1950's technology. The performance of this system has never provided satisfactory stability augmentation, which remains as an outstanding deficiency from the original flight test program. Incorporation of a standardized AFCS computer is planned as the first step in the solution to the problem. This unit will be developed and built using modern design methods and will provide improved system performance in all areas.</p>		
<p>2. Laser-Gyro Carrier Aircraft Inertial Navigation Systems (CAINS)ASN-139: The ASN-139 is being developed to reduce system costs by application of laser gyro technology to replace current electromechanical sensors in CAINS. Reliability will be increased and alignment time reduced. A five-to-one reduction in operation and support costs, compared with the presently installed ASN-92 CAINS, is expected.</p>		
There are seventy-five (75) aircraft in the inventory. Sixteen (16) aircraft will be modified from a Group I to Group II configuration and thirty-seven (37) aircraft will receive the Navigation Upgrade modification.		
ORD Number 31-20 dated 23 Jan 66.		
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:		
Kits are being procured and installed on all applicable aircraft		

FINANCIAL PLAN (TOA, \$ in Millions):																								
	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E		0.1																						0.1
PROCUREMENT																								
Installation Kits																								
ECP 400-Grp I to Grp II:	12	85.3	1	8.4			1	3.0													2	23.5	16	120.2
ECP 403-NAV Upgrade:	9	8.2	1	0.9	1	0.9	1	0.9	3	2.7						3	2.9	3	3.0	16	16.1	37	35.7	
ECP 402R1-Eng. Oil Warning	13	1.1																					13	1.1
ECP 246R1-Eng. Fire Wall	78	0.1																					78	0.1
ECP 410-SATCOM	4	0.3																					4	0.3
Installation Kits N/R		47.6																						47.6
Installation Equipment																								
ECP 400-Grp I to Grp II:	12	28.3	1	1.1			1	0.7													2	2.4	16	32.5
ECP 403-NAV Upgrade	9	5.1	1	0.4	1	0.4	1	0.4	3	1.2						3	1.3	3	1.3	16	6.9	37	17.0	
Installation Equipment N/R		1.0																						1.0
Engineering Change Orders																								
Data		14.7				0.5																16.3		31.5
Training Equipment		31.4				5.1	2	16.7				5	8.8										7	61.9
Support Equipment		19.6				13.1		10.1																42.8
ILS		11.5							1.5															12.9
Other Support		13.3		1.3		1.4		0.5	1.0	0.8		1.3		2.1		0.8		0.8						23.4
Interim Contractor Support																								
Installation Cost																								
ECP 400-Grp I to Grp II	12	34.5					1	1.5			1	0.7									2	3.9	16	40.6
ECP 403-NAV Upgrade	9	6.0					1	0.5	1	0.5	*2	1.0	3	1.5		*1	0.5				22	12.0	39	22.0
TOTAL PROCUREMENT		308.0		12.1		21.4		34.2		6.9		2.5		11.6		2.1		5.5		5.1		81.1		490.5

Exhibit P-3a

* Includes ISMT Trainer installation (1 ea.)
 Note: Totals do not add due to rounding.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: E-2C **MODIFICATION TITLE:** Block Upgrade II (OSIP 74-88)

INSTALLATION INFORMATION: This installation information is for the Group I to Group II Update Only (ECP# 400).

METHOD OF IMPLEMENTATION: Contractor (Turn-Key) Drive-In Modification (DIM) for kit procurements through FY 1996. Contractor DIM for kit procurements FY 1997 and subsequent.

ADMINISTRATIVE LEADTIME: 4 Months **PRODUCTION LEADTIME:** 24 Months

CONTRACT DATES: FY 1999: 01/99

DELIVERY DATE: FY 1999: 01/01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1998 & PY (13) kits	12	34.5					1	1.5			1	0.7												13	36.0	
FY 1999 (1) kits																								1	0.7	
FY 2000 (0) kits																										
FY 2001 (0) kits																										
FY 2002 (0) kits																										
FY 2003 (0) kits																										
FY 2004 (0) kits																										
FY 2005 (0) kits																										
To Complete (2) kits																							2	3.9	2	3.9
TOTAL	12	34.5					1	1.5			1	0.7											2	3.9	16	40.7

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	12							1							1											
Out	11	1						1							1											

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In									2	16
Out									2	16

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: E-2C **MODIFICATION TITLE:** Block Upgrade II (OSIP 74-88)

INSTALLATION INFORMATION: This installation information is for the Navigation Update Only (ECP# 403).

METHOD OF IMPLEMENTATION: Contractor (Turn-Key) Drive-In Modification (DIM) for kit procurements through FY 1996. Contractor DIM for kit procurements FY 1997 and subsequent.

ADMINISTRATIVE LEADTIME: 4 Months **PRODUCTION LEADTIME:** 24 Months

CONTRACT DATES: FY 1998: 01/98 FY 1999: 01/99 FY 2000: 01/00

DELIVERY DATE: FY 1998: 01/00 FY 1999: 01/01 FY 2000: 01/02

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (11) kits	9	6.0					1	0.5	1	0.5													11	7.0	
FY 1999 (2) kits *											*2	1.0											2	1.0	
FY 2000 (3) kits												3	1.5										3	1.5	
FY 2001 (0) kits																									
FY 2002 (1) kits *																	*1	0.5					1	0.5	
FY 2003 (0) kits																									
FY 2004 (3) kits																						3	1.6	3	1.6
FY 2005 (3) kits																						3	1.6	3	1.6
To Complete (16) kits																						16	8.8	16	8.8
TOTAL	9	6.0					1	0.5	1	0.5	*2	1.0	3	1.5				*1	0.5			22	12.0	39	22.0

* Includes ISMT Trainer installation.

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	4		2	2	1			1			1				2											
Out	4			2	2	1			1			1				2										

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In		1							21	39
Out			1						21	39

Exhibit P-3a	INDIVIDUAL MODIFICATION		
MODIFICATION TITLE:	<u>Outer Wing Panels (OSIP 87-88)</u>		
MODELS OF SYSTEM AFFECTED:	<u>E-2C</u>	TYPE MODIFICATION:	<u>Safety</u>
DESCRIPTION/JUSTIFICATION:			
<p>The E-2C fatigue test and inspection of aircraft have identified fatigue stress cracks in outer wing panels (OWP) which would cause the loss of aircraft and resulting in injury or loss of personnel. The OWP's installed on the E-2C aircraft are flight hour limited as follows: OWP's installed on T56-A-425 configured aircraft are limited to 6,500 flight hours and OWP's installed on T56-A-427 configured aircraft are limited to 7,500 flight hours. Teardowns of fleet OWP's showed that overhaul of the OWP is neither technically practical nor cost effective. This modification develops and incorporates enhancements to the OWP which extends the aircraft service life thru FY 2015. There are seventy-five (75) aircraft in the inventory. Forty-seven (47) aircraft will be retrofitted with the redesigned OWP.</p> <p>The Program includes enhancements that improve operational capability such as replacement rotodomes, fuselage enhancements, and empennage enhancements as necessary.</p>			
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:			
<p>An updated design OWP's was installed on all new production aircraft delivered after April 1985. Earlier aircraft will be retrofitted with the newly designed OWP.</p>			

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
RDT&E																										
PROCUREMENT																										
Installation Kits																										
ECP 362R2C2-OWP	82	77.7																							82	77.7
ECP TBD-Redesigned OWP					4	8.4	7	14.9	4	8.5	9	19.2									23	51.6	47	102.5		
Fatigue Life Enhancement																					22	94.1	22	94.1		
ECP 383R1C1-SDRS	108	0.6																							108	0.6
Attaching Hardware	5	1.4																							5	1.4
Installation Kits N/R		1.0																								1.0
Installation Equipment																										
ECP 383R1C1-SDRS		3.0																								3.0
ECP TBD-Rotodomes																					26	44.9	26	44.9		
Installation Equipment N/R																										
Engineering Change Orders																										
Data		1.7																								1.7
Training Equipment																										
Support Equipment		0.9																								0.9
ILS																										
Other Support																										
Interim Contractor Support																										
Installation Cost																										
ECP 362R2C2-OWP	82	0.7																							82	0.7
ECP TBD-Redesigned OWP																										
Fatigue Life Enhancement																					22	15.8	22	15.8		
ECP 383R1C1-SDRS																										
ECP TBD-Rotodomes																					26	15.8	26	15.8		
TOTAL PROCUREMENT		86.9				8.4		14.9		8.5		19.2										222.4		360.2		

Note: 1) Installation of the Redesigned OWP for FY98 thru "To Complete" Kits will be an "O" Level Installation.
 2) Totals do not add due to rounding.

Exhibit P-3a

Exhibit P-3a	INDIVIDUAL MODIFICATION													
MODIFICATION TITLE: <u>Satellite Communications (SATCOM) (OSIP 21-95)</u>														
MODELS OF SYSTEM AFFECTED: <u>E-2C</u>	TYPE MODIFICATION: <u>Readiness</u>													
DESCRIPTION/JUSTIFICATION:														
<p>By JCS directives, all components of the Armed Forces who have satellite communications must be able to communicate using the Demand Assign Multiple Access (DAMA) waveform and be capable of narrow band secure voice. To meet these requirements the E-2C program will integrate Mini-DAMA into the aircraft. The Mini-DAMA unit is a UHF, full duplex radio with four full duplex ports and eight half duplex baseboard input/output. It incorporates the UHF SATCOM, line of sight radio functions, 5 and 25 KHz DAMA waveforms and embedded OTCIXS II, KGV-11 (TRANSEC) and COMSEC module for oderwire encryption for both 5 and 25 KHz DAMA functions. The Mini-DAMA has growth provisions for secure voice (ANDVT), TADIX-A, KG-84A and SAFENET. There are seventy-five (75) aircraft in the inventory. Fifty-Three (53) aircraft will be retrofitted with this modification.</p> <p>ORD Number 174-094-87 dated 12 Aug 87.</p>														
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:														
<p>PMW-156 is the sponsor of the Mini-DAMA. The Mini-DAMA equipment schedule projects the following milestones: Two Engineering Development Models (EDMs) in April 1993; five EDMs in September 1993; air integration's started in the 3rd quarter FY 1993 and ended in the 1st quarter FY 1995; formal testing was conducted from February 1996 through August 1996. Production deliveries started in June 1996.</p>														
FINANCIAL PLAN (TOA, \$ in Millions):														
	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
RDT&E														
PROCUREMENT														
Installation Kits														
ECP 410R3-AFT EQUIP. (AEC)	34	6.3		6	0.7							40	7.0	
Installation Kits N/R		20.6										20.6		
Installation Equipment														
ECP 410R3-AFT EQUIP. (AEC)	12	5.5	20	6.7	4	1.3						36	13.6	
Installation Equipment N/R														
Engineering Change Orders														
Data		0.8											0.8	
Training Equipment														
Support Equipment														
ILS		0.4											0.4	
Other Support		5.2											5.2	
Interim Contractor Support														
Installation Cost														
ECP 410R3-AFT EQUIP. (AEC)	34	1.6											34	1.6
TOTAL PROCUREMENT		40.3		6.7		2.0							49.1	

Notes: 1) Beginning in FY99 this OSIP has been superseded by OSIP 19-99 Block Upgrade III.
 2) The six (6) kits in FY 98 will be installed by the Contractor, as negotiated through consideration.
 3) Totals do not add due to rounding.

Exhibit P-3a

Exhibit P-3a	INDIVIDUAL MODIFICATION											
MODIFICATION TITLE: <u>Replacement Computer (OSIP 4-97)</u>												
MODELS OF SYSTEM AFFECTED: <u>E-2C</u>	TYPE MODIFICATION: <u>Readiness</u>											
DESCRIPTION/JUSTIFICATION:												
<p>The L-304 central data processing computer uses inputs from onboard sensors, data links, and a library of stored data to present a symbolic representation of the tactical situation to the operators. Data expansion resulting from Update Development Program II has pushed the computer capability to its ultimate limit, preventing utilization of improved target detection which could be achieved by emerging radar technology, infrared search and track, and SATCOM. All of these technologies are needed for execution of the E-2C battle management mission and for cooperative engagement operations. This OSIP funds retrofit of a replacement computer based on proven advances in computer technology and developed under the RDT&E Program Element cited below. There are seventy-five (75) aircraft in the inventory. Fifty-Three (53) aircraft will be retrofitted with this modification.</p> <p>ORD Number 371-88-94 dated 20 Sep 94.</p>												
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:												
<p>Engineering and Manufacturing Development (E&MD), System Design Review, Software Specification Review and start of fabrication of pre-production computers commenced in the first quarter FY 1995. Pre-production mission computers will be delivered in FY 1996. Development and Operational Testing will continue through FY 1999.</p>												
FINANCIAL PLAN (TOA, \$ in Millions):												
	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	TOTAL
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E		128.4		60.5		36.9		9.8				235.6
PROCUREMENT												
Installation Kits												
ECP 417-E&MD			5	6.6								5 6.6
Installation Kits N/R												
Installation Equipment			5	1.1	3	0.8						8 1.9
Installation Equipment N/R												
Engineering Change Orders												
Data				*								0.0
Training Equipment					1.2							1.2
Support Equipment												
ILS												
Other Support				0.1								0.1
Interim Contractor Support												
Installation Cost												
ECP 417-E&MD					5	3.9						5 3.9
TOTAL PROCUREMENT				7.8		5.9						13.7

Notes: 1) Beginning in FY99 this OSIP has been superseded by OSIP 19-99 Block Upgrade III.
2) Totals do not add due to rounding.
3) * Indicates a dollar amount less than \$50,000.

Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: E-2C **MODIFICATION TITLE:** Replacement Computer (OSIP 4-97)

INSTALLATION INFORMATION: _____

METHOD OF IMPLEMENTATION: Contractor modification line.

ADMINISTRATIVE LEADTIME: 3 Months **PRODUCTION LEADTIME:** 12-24 Months

CONTRACT DATES:

DELIVERY DATE:

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2003		FY 2003		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 1998 & PY (5) kits					5	3.9																	5	3.9
FY 1999 (*) kits																								
FY 2000 (*) kits																								
FY 2001 (*) kits																								
FY 2002 (*) kits																								
FY 2003 (*) kits																								
FY 2004 (*) kits																								
FY 2005 (*) kits																								
To Complete (*) kits																								
TOTAL					5	3.9																	5	3.9

* Note: Beginning in FY99 this OSIP has been superseded by OSIP 19-99 Block Upgrade III.

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In			2	2	1																				
Out				2	2	1																			

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										5
Out										5

Exhibit P-3a	INDIVIDUAL MODIFICATION													
MODIFICATION TITLE: <u>Aircrew Safety and Survival (OSIP 1-98)</u>														
MODELS OF SYSTEM AFFECTED: <u>E-2C</u>	TYPE MODIFICATION: <u>Safety</u>													
DESCRIPTION/JUSTIFICATION:														
<p>The Parachute Survival Ensemble (PSE) replaces the A/P22P-11 Crew Backpack Assembly, currently installed on the E-2C aircraft. During scheduled inspections the A/P22P-11 Crew Backpack Assembly has high component rejection rates. This has occurred since it's introduction in 1988. Recent 1996 inspections at NAS Norfolk produced 90% rejection rates. It has poor supply support, greater than 43 days turnaround times at NAS Miramar. During live jump tests in June 1994 the parachute had a catastrophic failure due to it's canopy first deployment design. As a result of these factors, the confidence of the crew members and the maintainers has declined dramatically. There is a requirement per input from OAG, NAWC-WD and the fleet for the PSE. The PSE provides increased safety, longer shelf life of components, elimination of the torso harness, single point release and Full Face Mask compatible.</p> <p>There are seventy-five (75) aircraft in the inventory. Fifty-five (55) aircraft will be retrofitted with this ECP.</p>														
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:														
<p>The prototype contract was signed in December 1995. Delivery of the prototype was in March 1996. Fleet evaluations were successfully conducted from March 1996/May 1997. The final qualification phase began in January 1998 and was completed December 1998.</p>														
FINANCIAL PLAN (TOA, \$ in Millions):														
	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
RDT&E														
PROCUREMENT														
Installation Kits														
ECP 16336R3-PSE KIT			75	1.4	100	1.8	40	0.7			60	1.2	275	5.2
Installation Kits N/R				0.7									0.7	
Installation Equipment														
Installation Equipment N/R														
Engineering Change Orders														
Data				0.3										0.3
Training Equipment				0.1		0.5		0.2					0.2	1.0
Support Equipment				*									0.4	0.4
ILS				0.1		1.3							0.5	1.9
Other Support				0.2		0.1							0.7	1.1
Interim Contractor Support														
Installation Cost														
TOTAL PROCUREMENT				2.9		3.8		0.9					3.1	10.7

Note: 1) A total of 275 PSE's are required. 1 kit of 5 PSE assemblies = 1 aircraft. 'O' Level installation.
 2) Totals do not add due to rounding.
 3) * Indicates a dollar value is less than \$50,000.

Exhibit P-3a

Exhibit P-3a		INDIVIDUAL MODIFICATION	
MODIFICATION TITLE:	Block Upgrade III (OSIP 19-99)		
MODELS OF SYSTEM AFFECTED:	E-2C	TYPE MODIFICATION:	Mission Performance Enhancement
DESCRIPTION/JUSTIFICATION:			
<p>The HAWKEYE 2000 OSIPs (Satellite Communications 21-95, Vapor Cycle 22-95, Mission Computer Upgrade 4-97, and Cooperative Engagement Capability 12-97) were consolidated into one engineering change proposal (ECP-418) to realize efficiencies in cost and scheduling. The efficiencies realized with consolidating HAWKEYE 2000 modifications under ECP-418 were reflected in the FY 1997 budget. Subsequent to establishment of ECP-418, it has become exceedingly difficult to coordinate kit and install quantities, contract dates, and training requirements across the four ECP-418 OSIPs. Beginning in FY 1999 the ECP-418 OSIPs were combined into one new OSIP, 19-99 Block Upgrade III. Consolidation of the OSIPs provides management a concise picture of cost and schedule requirements to modify and field HAWKEYE 2000 aircraft. The funding in FY99 thru FY00 for training equipment is to support the HAWKEYE 2000 production aircraft being delivered in FY02. The funding will procure one (1) Weapon System trainer, one (1) CEC Antenna trainer, one (1) Maintenance trainer design and one (1) Computer Based Trainer (CBT) update. There are seventy-five (75) total aircraft in the inventory. Fifty-three (53) aircraft will be retrofitted with this ECP.</p> <p>Satellite Communication (SATCOM): By JCS directives, all components of the Armed Forces who have satellite communications must be able to communicate using the Demand Assign Multiple Access (DAMA) waveform and be capable of narrow band secure voice. To meet these requirements the E-2C program will integrate Mini-DAMA into the aircraft. The Mini-DAMA unit is a UHF, full duplex radio with four full duplex ports and eight half duplex baseboard input/output. It incorporates the UHF SATCOM, line of sight radio functions, 5 and 25 KHz DAMA waveforms and embedded OTCIXS II, KGV-11 (TRANSEC) and COMSEC module for overwire encryption for both 5 and 25 KHz DAMA functions. The Mini-DAMA has growth provisions for secure voice (ANDVT), TADIX-A, KG-84A and SAFENET. Previously OSIP# 21-95. ORD Number 174-094-87 dated 12 Aug 87. There are seventy-five (75) aircraft in the inventory. Fifty-Three (53) aircraft will be retrofitted with this modification.</p> <p>Vapor Cycle: The vapor cycle installed in the E-2C uses CFC-114 coolant. The Montreal Protocol calls for termination of the CFC production after 1995. Efforts to find an acceptable substitute for use in the vapor cycle currently installed in the E-2C have been successful. ECP 418 involves the re-design of the current 12-ton vapor cycle so that it will provide adequate cooling and environmentally acceptable coolant necessary to operate the Hawkeye 2000 systems. Previously OSIP# 22-95. There are seventy-five (75) aircraft in the inventory. Fifty-Three (53) aircraft will be retrofitted with this modification.</p> <p>Mission Computer Upgrade (MCU): The L-304 central data processing computer uses inputs from onboard sensors, data links, and a library of stored data to present a symbolic representation of the tactical situation to the operators. Data expansion resulting from Update Development Program II has pushed the computer capability to its ultimate limit, preventing utilization of improved target detection which could be achieved by emerging radar technology, infrared search and track, and SATCOM. All of these technologies are needed for execution of the E-2C battle management mission and for cooperative engagement operations. This OSIP funds retrofit of a replacement computer based on proven advances in computer technology and developed under the RDT&E Program Element No. 0204152N. As part of the MCU suite, the three (3) existing Cathode Ray Tube displays will be replaced with Advance Control Indicator Set (ACIS) workstations incorporating flat panel displays, and connected via a local area network. The layout of the ACIS workstation controls has been heavily influenced by Fleet inputs. Additionally, based on Commercial Off The Shelf (COTS) technology, the ACIS workstations will streamline Integrated Logistics Support and facilitate future upgrades. Previously OSIP# 4-97. ORD Number 371-88-94 dated 20 Sep 94. There are seventy-five (75) aircraft in the inventory. Fifty-Three (53) aircraft will be retrofitted with this modification.</p> <p>Cooperative Engagement Capability (CEC): The Navy has developed the capability to share sensor data through a network and perform the targeting process using sensors installed in remote platforms to augment the target position information on individual ships. The E-2C radar and passive detection systems provide vital target information over an increased surveillance area for greater situational awareness and provides early warning of distant targets. This program identifies the costs associated with integrating CEC into 53 E-2Cs and developing the support structure necessary to successfully deploy the system. Previously OSIP# 12-97. ORD Number 388-86-95 dated 4 Jan 95. There are seventy-five (75) aircraft in the inventory. Fifty-Three (53) aircraft will be retrofitted with this modification.</p>			
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:			
<p>SATCOM: PMW-156 is the sponsor on the Mini-DAMA. LRIP deliveries started in June 1996. Operational Assessment completed and production has resumed. Vapor Cycle: N/A. Mission Computer Upgrade (MCU): LRIP decision was granted in July 1997. OPEVAL is scheduled for FY 99. Full Rate Production is scheduled for FY 00. Cooperative Engagement Capability (CEC): PEO TAD(C) is the sponsor of Cooperative Engagement Capability.</p>			

FINANCIAL PLAN (TOA, \$ in Millions):																									
	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
ECP 418-Hawkeye 2000																	3	16.0	3	16.3		47	266.0	53	298.2
Installation Kits N/R																									
Installation Equipment																									
ECP 418-Hawkeye 2000																	3	22.4	3	22.8		47	353.7	53	398.8
Installation Equipment N/R																									
Engineering Change Orders																									
Data							1.1		0.9								2.8		4.0			0.4		9.3	
Training Equipment							1	25.0	1	9.8	1	4.3		2.4			1	8.4		9.3	2	15.6	6	74.8	
Support Equipment							2.1										4.1		4.5			1.3		12.0	
ILS							0.5										2.4		2.6					5.6	
Other Support							0.6										1.0		0.9			11.7		14.1	
Interim Contractor Support																									
Installation Cost																									
ECP 418-Hawkeye 2000																						54	141.6	54	141.6
TOTAL PROCUREMENT							29.3		10.8		4.3		2.4				57.1		60.4		790.3		954.5		

Notes: 1) Installation costs and quantities in To Complete include one (1) ISMT Trainer.
 2) Totals do not add due to rounding.

Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: E-2C MODIFICATION TITLE: Block Upgrade III (OSIP 19-99)

INSTALLATION INFORMATION: _____

METHOD OF IMPLEMENTATION: Contractor Drive-In Modification (annualized funding/2year lead-time).

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 24 Months

CONTRACT DATES:

DELIVERY DATE:

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (0) kits																									
FY 1999 (0) kits																									
FY 2000 (0) kits																									
FY 2001 (0) kits																									
FY 2002 (0) kits																									
FY 2003 (0) kits																									
FY 2004 (3) kits																						3	2.6	3	2.6
FY 2005 (3) kits																						3	2.6	3	2.6
To Complete (48) kits																						*(48)	136.5	*(48)	136.5
TOTAL																						54	141.6	54	141.6

* Note: Includes one (1) ISMT trainer installation.

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2002			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In																									
Out																									

	FY 2003				FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In													54	54
Out													54	54

Exhibit P-40, BUDGET ITEM JUSTIFICATION	DATE: February 1999
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APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications	P-1 ITEM NOMENCLATURE TRAINER AIRCRAFT MODIFICATIONS
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Program Element for Code B Items:	Other Related Program Elements
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	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
QTY		A											
COST (In Millions)	4.3	A	6.4	9.0	7.4	8.9	12.2	12.0	13.4			13.0	86.6

This line item funds modifications to a group of trainer aircraft which includes the T-34C, T-38, CT-39, T-44A, TH-57 and the TH-6. The training aircraft are described as follows: The T-34C is a single engine turbo-prop, multi-seat aircraft produced by Beech Aircraft used to simulate jet aircraft flight; the T-38 is a twin engine, multi-seat aircraft produced by Northrop used for supersonic flight training; the CT-39 is a dual engine multi-purpose light transport aircraft to be converted to trainer usage; the T-44A is a twin engine, multi-seat aircraft produced by Beech Aircraft used to simulate operation of twin engine aircraft, specifically the P-3; the TH-57 and TH-6 are a single engine, multi-seat rotary wing aircraft used for helicopter training.

The overall goal of the modifications is to maintain safe and reliable operation of the trainer aircraft through the timely installation of necessary changes. The specific modifications budgeted and programmed are:

(TOA, \$ in Millions)

OSIP No.	Description	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
41-92	T-38 Cockpit Enclosure Mod	3.8	1.1										4.9
05-96	T-44 Global Positioning System (GPS)	0.5	1.5	1.9	1.8	0.6						2.6	8.8
08-97	TH-57 Global Positioning System (GPS)		0.7	3.9									4.6
13-97	T-34 Global Positioning System (GPS)		1.3	1.8	1.6	2.1	0.2					5.4	12.4
21-97	TH-57 TOT Gauge		1.5										1.5
24-97	CT-39 Conversion to T-39		0.2	1.4	4.0							4.8	10.2
20-98	T-34 Amark Extraction			0.1									0.1
02-00	TFS TH-6 Commercialization					0.2	0.3						0.5
03-00	TH-57 Autofault Chip Detector					1.0	0.9						1.9
04-00	T-44 Fire Warning System					0.3	0.3					0.3	0.8
05-00	UNFOTS Upgrade					4.7	10.6	11.0	13.4				39.7
-02	TH-57 Seat							1.0					1.0
	Total	4.3	6.4	9.0	7.4	8.9	12.2	12.0	13.4			13.0	86.6

Note: Totals may not add due to rounding.

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Global Positioning System (GPS) (OSIP 5-96)

MODELS OF SYSTEMS AFFECTED: T-44A TYPE MODIFICATION: Safety

DESCRIPTION/JUSTIFICATION: The NAVSTAR GPS is a spaced-based radio positioning and navigation system that will provide three dimensional position, velocity and time information to suitably equipped users anywhere on or near the earth. The GPS system will interface with communication, navigation and weapon systems equipment; i.e., Automatic Heading Reference System, Flight Management System, on selected applications. In the T-44A aircraft, this will be accomplished by intregation of the Interstate Electronics 9002M Flight Management with Integral Global Positioning System Sensor and Collins AP-106 Autopilot and FD-112V Flight Director. This system will allow enroute and terminal GPS navigation as well as nonprecision GPS approach. Incorporation of GPS in the T-44A enhances mission capability as such operations were heretofore not possible in this aircraft. A waiver has been granted by ASD to procure commercial, Standard Positioning Service (SPS) GPS receivers. Therefore, this OSIP covers the complete kits (and installations) required for GPS capability using commercial SPS systems. Directed by ASSISTANT SECRETARY OF DEFENSE MEMORANDUM OF 1 DEC.94 SUBJ, COMMERCIAL GPS RECEIVER FOR T-44 AIRCRAFT. There are 55 T-44A in the inventory and all 55 will receive this modification. The T-44 GPS/FMS "A" Kit is comprised of components/software provisions such as wiring, connectors, antennas, mounting trays, circuit breakers, etc. The "B" Kit is comprised of the major equipment hardware such as "black boxes."

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The GPS system to be installed will be a commercially available, Non-Development Item (NDI).

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
A Kit	3	0.2	8	0.5	11	0.7	13	0.8	2	0.1											18	1.2	55	3.6	
B Kit	3	0.1	8	0.3	11	0.4	13	0.6	2	0.1											18	0.8	55	2.4	
Installation Kits N/R		0.2																						0.2	
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data				0.2																					0.2
Training Equipment				0.3		0.8																			1.0
Support Equipment																									
ILS																									
Other Support				0.1				0.1		*												0.2			0.5
Interim Contractor Support				0.1				0.1		0.1												0.2			0.4
Installation Cost								34	0.2	40	0.2										36	0.2	110	0.6	
Total Procurement		0.5		1.5		1.9			1.8		0.6											2.6		8.8	

Notes:

1. Totals may not add due to rounding
2. Asterik indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: T-44A MODIFICATION TITLE: Global Positioning System (GPS) (OSIP 5-96)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Forced Retrofit

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 3 Months

CONTRACT DATES: FY 1998: Sep-98 FY 1999: Sep-99 FY 2000: Sep-00

DELIVERY DATE: FY 1998: Dec-98 FY 1999: Dec-99 FY 2000: Dec-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (44) kits							34	0.2	10	0.1													44	0.3	
FY 1999 (26) kits									26	0.1													26	0.1	
FY 2000 (4) kits									4	*													4		
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete (36) kits																						36	0.2	36	0.2
TOTAL							34	0.2	40	0.2												36	0.2	110	0.6

* Indicates amounts less than \$50K.

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In					8	8	9	9	10	10	10	10													
Out					8	8	9	9	10	10	10	10													

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In									36	110
Out									36	110

Exhibit P-3a	Individual Modification																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: TH-57 MODIFICATION TITLE: Global Positioning System (GPS) (OSIP 8-97)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Forced Retrofit

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 1 Months

CONTRACT DATES: FY 1998: Dec-97 FY 1999: N/A FY 2000: N/A

DELIVERY DATE: FY 1998: Jan-98 FY 1999: N/A FY 2000: N/A

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 1998 & PY (74) kits					74	0.2																	74	0.2
FY 1999 () kits																								
FY 2000 () kits																								
FY 2001 () kits																								
FY 2002 () kits																								
FY 2003 () kits																								
FY 2004 () kits																								
FY 2005 () kits																								
To Complete () kits																								
TOTAL					74	0.2																	74	0.2

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In		18	18	19	19																				
Out		18	18	19	19																				

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										74
Out										74

Exhibit P-3a	Individual Modification																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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MODELS OF SYSTEMS AFFECTED:	<u>T-34C</u> TYPE MODIFICATION: <u>Safety</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
<p>DESCRIPTION/JUSTIFICATION: The NAVSTAR GPS is a spaced-based radio positioning and navigation system that will provide three-dimensional position, velocity and time information to suitably equipped users anywhere on or near the earth. The GPS system will interface with communication, navigation and weapon systems equipment; i.e., Automatic Heading Reference Ssystem, Flight Management System, on selected applications. A waiver to use commercial, Standard Positioning Service (SPS) GPS receivers was approved by ASD. In the T-34 aircraft, this will be accomplished by integration of the Allied Signal KLN-900 GPS. This system will allow enroute and terminal GPS navigation as well as nonprecision GPS approach. Incorporation of GPS in 34 enhances mission capability as such operations were heretofore not possible in this aircraft. Directed by Assistant Secretary of Defense Memorandum of 1 Dec 94, Subj, Commercial GPS Receiver for T-34C Aircraft. There are 318 T-34 in the inventory of which 296 will be modified.</p>																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
<p>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The GPS system to be installed will be a commercially available, Non-Development Item (NDI).</p>																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: T-34C MODIFICATION TITLE: Global Positioning System (GPS) (OSIP 13-97)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Forced Retrofit

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 1 Months

CONTRACT DATES: FY 1998: Aug-98 FY 1999: Aug-99 FY 2000: Aug-00

DELIVERY DATE: FY 1998: Sep-98 FY 1999: Sep-99 FY 2000: Sep-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1998 & PY (67) kits								67	0.2															67	0.2	
FY 1999 (47) kits									47	0.2															47	0.2
FY 2000 (65) kits									28	0.1	37	0.1													65	0.2
FY 2001 () kits																										
FY 2002 () kits																										
FY 2003 () kits																										
FY 2004 () kits																										
FY 2005 () kits																										
To Complete (117) kits																								117	0.5	
TOTAL								67	0.2	75	0.3	37	0.1										117	0.5	296	1.1

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In					16	17	17	17	20	20	20	15	10	9	9	9									
Out					16	17	17	17	20	20	20	15	10	9	9	9									

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In									117	296
Out									117	296

Exhibit P-3a Individual Modification

MODIFICATION TITLE: CT-39 Conversion to T-39 (OSIP 24-97)

MODELS OF SYSTEMS AFFECTED: CT-39G TYPE MODIFICATION: Conversion/Safety

DESCRIPTION/JUSTIFICATION: This modification converts passenger/cargo CT-39G aircraft to T-39G training configuration. Conversion consists of an additional instructor station (folding seat), a student instrument panel in the rear of the aircraft, inter-communications (ICS) stations for instructor station and for student/instructor in rear of aircraft, and smoke/oxygen masks (safety equipment). Conversion of CT-39G aircraft is directed by Training System Requirements Document of Nov 94. All 8 aircraft in the inventory will be modified. Kit costs reflect configuration differences between BuNos. This modification is being accomplished via an ECP from Avtel Services, Inc. An "A" kit consists of seat assembly (with cushion), smoke/oxygen masks, oxygen supply, instrument console, flight instruments, three ICS stations (controllers), amplifiers, wiring, mounting structure, and mounting hardware. A "B" kit consists of a stand alone refrigerant air conditioning system compressor, condenser, evaporator, accumulator, l ducting, and mounting hardware. A "C" kit consists of Recorder, engine/flight control sensors, voice recorder, wiring, and mounting hardware. A "D" kit consists of multi-function display, a computer, speakers, alert lamps, processor, directional antenna, controller, and wiring, mounting and electrical hardware.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Components of this block upgrade will be commercial-off-the-shelf (COTS) items with the exception of the training specific modifications. Limited integration effort is required. The major development effort for the upgrade is incorporation of mission specific training equipment.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
A Kit Instr Jumpseat, ICS					3	0.9			5	1.7														8	2.6
B Kit Air Conditioning					1	0.1			7	0.6														8	0.6
C Kit FDR/CVR					1	0.1			7	0.9														8	1.0
D Kit TCAS II, 6X8 MFD, GPWS																						8	4.2	8	4.2
Installation Kits N/R						0.2																			0.2
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data																									
Training Equipment																									
Support Equipment																									
IJS				0.2																					0.2
Other Support										0.3															0.3
Interim Contractor Support																									
Installation Cost									24	0.6												8	0.6	32	1.2
Total Procurement				0.2		1.4			4.0													4.8		10.2	

Notes:
1. Totals may not add due to rounding

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CT-39G MODIFICATION TITLE: CT-39 Conversion to T-39 (OSIP 24-97)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Concurrent with Aircraft Condition Inspection (ACI) - Contractor Installed Commercial Kits

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME 1 Months

CONTRACT DATES: FY 1998: Nov-97 FY 1999: Oct-98 FY 2000: N/A

DELIVERY DATE: FY 1998: Dec-97 FY 1999: Nov-98 FY 2000: N/A

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1998 & PY (5) kits							5	0.1																5	0.1	
FY 1999 (19) kits							19	0.4																19	0.4	
FY 2000 () kits																										
FY 2001 () kits																										
FY 2002 () kits																										
FY 2003 () kits																										
FY 2004 () kits																										
FY 2005 () kits																										
To Complete (8) kits																							8	0.6	8	0.6
TOTAL								24	0.6														8	0.6	32	1.2

1. Totals may not add due to rounding

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In																										
Out						6	6	6	6																	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In									8	32
Out									8	32

Exhibit P-3a		Individual Modification																							
MODIFICATION TITLE:		TPS TH-6 COMMERCIALIZATION (OSIP 02-00)																							
MODELS OF SYSTEMS AFFECTED:		TH-6B										TYPE MODIFICATION: Reliability / Maintainability													
DESCRIPTION/JUSTIFICATION: These United States Test Pilot School aircraft require reconfiguration to commercial FAA standards for continued airworthiness. Four engines and four rotor heads require modification to commercial standards. The mod will extend the Time between Overhaul (TBO) of the engine to 3500 hours (from 1530 hours). The main rotor hub will extend its TBO to 2650 hours (from 1200) and improve aircraft performance by reducing helicopter vibration. The conversion to commercial standards was directed by NAVAIRSYSCOM 1.0 First Endorsement ltr dtd 21 Mar 96. Of the 6 aircraft in the TH-6B inventory, four require mod completion.																									
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: These are commercially available non-developmental items.																									
FINANCIAL PLAN: (TOA, \$ in Millions)																									
	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Engine Kit									1	0.1			3	0.3											
Hub Kit									4	0.1															
Installation Kits N/R																									
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data																									
Training Equipment																									
Support Equipment																									
ILS																									
Other Support																									
Interim Contractor Support																									
Installation Cost																									
Total Procurement										0.2		0.3													0.5
Notes:																									
1. Totals may not add due to rounding																									
2. Kits will be delivered to the Test Pilot School for organizational install.																									

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Auto-Fault Chip Detector System (OSIP 03-00)

MODELS OF SYSTEMS AFFECTED: TH-57 TYPE MODIFICATION: Safety

DESCRIPTION/JUSTIFICATION: The existing chip detection system remains silent when the critical wire that connects the detector to the control panel is broken. This could lead to extended flight in an unsafe aircraft. The Autofault System provides continuous monitoring of up to eleven crucial, one wire, warning systems. It immediately alerts the pilot when a broken wire occurs and allows the pilot to safely land before a problem can become critical. In addition, unnecessary engine removals for nuisance chips (due to normal wear) will be significantly reduced. There are 126 TH-57 in the Inventory, of which all 126 will be modified. A waiver to use commercial, Standard Positioning Service (SPS) GPS receivers was approved for the TH-57.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: System to be installed will be a commercially available, Non-development Item (NDI)

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Kit									56	0.5	70	0.6											126	1.0	
Installation Kits N/R										0.2														0.2	
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data										0.1														0.1	
Training Equipment																									
Support Equipment																									
ILS																									
Other Support										0.1		0.1												0.2	
Interim Contractor Support										0.1		0.1												0.2	
Installation Cost									56	0.1	70	0.2											126	0.3	
Total Procurement										1.0		0.9												1.9	

Notes:
1. Totals may not add due to rounding

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: TH-57 MODIFICATION TITLE: Auto-Fault Chip Detector System (OSIP 03-00)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Forced Retrofit

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME 1 Months

CONTRACT DATES: FY 1998: N/A FY 1999: N/A FY 2000: Jan-00

DELIVERY DATE: FY 1998: N/A FY 1999: N/A FY 2000: Feb-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1998 & PY () kits																										
FY 1999 () kits																										
FY 2000 (56) kits									56	0.1														56	0.1	
FY 2001 (70) kits											70	0.2													70	0.2
FY 2002 () kits																										
FY 2003 () kits																										
FY 2004 () kits																										
FY 2005 () kits																										
To Complete () kits																										
TOTAL									56	0.1	70	0.2												126	0.3	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In																										
Out											18	19	19	18	18	17	17									

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										126
Out										126

Exhibit P-3a	Individual Modification																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
MODIFICATION TITLE:	<u>ENGINE FIRE WARNING SYSTEM OSIP 04-00</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
MODELS OF SYSTEMS AFFECTED:	<u>T-44A</u> TYPE MODIFICATION: <u>Safety</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
<p>DESCRIPTION/JUSTIFICATION: Over the past 5 ½ years, the T-44 has experienced approximately 83 false fire warnings with the current configuration optical flame detectors resulting in sortie aborts, decreased safety, and unnecessary maintenance actions. The Chief of Naval Air Training (CNATRA) requested in their letter 13127 Ser N42/02163 dated 14 Nov 96 that PMA-207 identify a reliable replacement engine fire warning system. The Original Equipment Manufacturer (OEM) recommended replacement system is the Wittaker Model 801-DHR Pneumatic Fire/Overheat Detector System.</p> <p>Safety of aircraft operation is the primary reason to replace the T-44 engine fire warning system. When the fire warning light is illuminated in flight, an emergency shutdown of the engine is initiated and a single engine landing must be made. False fire warnings increase the number of emergency engine shutdowns and single engine landings. False engine fire warnings also result in sortie aborts which degrade CNATRA's ability to meet T-44 Pilot Training Requirements (PTR). Each false warning cost estimated \$2200 in troubleshooting and required maintenance. Numerous changes to maintenance and pre-flight procedures have been implemented to improve reliability and test and check engine flame detectors. However, these maintenance and pre-flight procedures are time-consuming, costly, and have not substantially improved the engine flame detector failure rate. There are 55 T-44A Inventory and all 55 will receive this modification.</p>																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: System to be installed will be a commercially available, Non-development Item (NDI)																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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Complete		Total		Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	RDT&E																										PROCUREMENT																										Installation Kits																										Kit											26	0.2									29	0.2	55	0.5	Installation Kits N/R									0.3															0.3	Installation Equipment																										Installation Equipment N/R																										Engineering Change Orders																										Data									*															*	Training Equipment																										Support Equipment																										ILS																										Other Support									*		*											*		0.1	Interim Contractor Support																										Installation Cost											26	*									29	*	55	*	Total Procurement									0.3		0.3										0.3		0.8	
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Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: T-44A MODIFICATION TITLE: Engine Fire Warning System (OSIP 04-00)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Forced Retrofit

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 1 Months

CONTRACT DATES: FY 1998: N/A FY 1999: N/A FY 2000: N/A

DELIVERY DATE: FY 1998: N/A FY 1999: N/A FY 2000: N/A

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 (26) kits											26	*												26	*
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete (29) kits																						29	0.0	29	0.0
TOTAL											26	*									29	0.0	29	0.0	

* Indicates amount less than \$50K.

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In																									
Out															13	13									

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In									29	55
Out									29	55

Exhibit P-3a Individual Modification

MODIFICATION TITLE: UNFOTS Upgrade (OSIP 05-00)

MODELS OF SYSTEMS AFFECTED: T-39N & Ground Based Training System (GBTS) TYPE MODIFICATION: Conversion / Safety

DESCRIPTION/JUSTIFICATION: This block upgrade to the Undergraduate Naval Flight Officer Training System (UNFOTS) is needed to enable the system to meet the requirements of the 4 Nov 1994 Training Systems Requirements Document (TSRD) and the latest Federal Aviation Administration (FAA) safety mandates. This block upgrade consists of the following aircraft and Ground Based Training System (GBTS) improvements: Radar upgrade, incorporation of GPS, GPWS, TCAS II, and GBTS upgrade to match enhanced radar. This block upgrade increases mission capability by bringing the T-39N aircraft in compliance with the minimum FAA requirements for future U.S. airways operation. Total T-39N inventory is 17 aircraft, all will receive this upgrade. It will be requested from the T-39N Logistics Support Contractor. A TCAS II kit consists of a display, processor, directional antenna, computer, controller, and mounting and electrical hardware. A GPS kit consists of a computer, antenna, wiring, and mount hardware. A GPWS kit consists of a computer, speakers, alert lamps display, wiring, and mounting hardware.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: With the exception of the GBTS, the components of the block upgrade will be COTS items. Only a limited aircraft integration effort will be required. The GBTS is a table top computer system with multiple stations to simulate airborne radar stations.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total				
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$			
RDT&E																											
PROCUREMENT																											
Installation Kits																											
A Kit									3	3.6		5	9.6		4	8.0		5	8.2						17	29.4	
Installation Kits N/R										0.6																0.6	
Installation Equipment																											
Installation Equipment N/R																											
Engineering Change Orders																											
Data																											
Training Equipment														2.1		3.9									6.0		
Support Equipment																											
ILS																											
Other Support										0.3		0.4		0.4		0.4										1.5	
Interim Contractor Support																											
Installation Cost										3	0.2		5	0.6		4	0.5		5	0.9						17	2.2
Total Procurement										4.7		10.6		11.0		13.4									39.7		

Notes:
1. Totals may not add due to rounding

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: UNFO T-39N and GBTS MODIFICATION TITLE: UNFOTS Upgrade (OSIP 05-00)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Installation of COTS Kits Concurrent with ACI

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 1 Months

CONTRACT DATES: FY 1998: N/A FY 1999: N/A FY 2000: Oct-99

DELIVERY DATE: FY 1998: N/A FY 1999: N/A FY 2000: Dec-99

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL				
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$			
FY 1998 & PY () kits																											
FY 1999 () kits																											
FY 2000 (3) kits									3	0.2														3	0.2		
FY 2001 (5) kits											5	0.6													5	0.6	
FY 2002 (4) kits													4	0.5											4	0.5	
FY 2003 (5) kits															5	0.9										5	0.9
FY 2004 () kits																											
FY 2005 () kits																											
To Complete () kits																											
TOTAL											3	0.2	5	0.6	4	0.5	5	0.9							17	2.2	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
In																													
Out												1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	1	1	1

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										17
Out	1									17

Exhibit P-40, BUDGET ITEM JUSTIFICATION								DATE: February 1999					
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/AFN-5 Aircraft Modifications								P-1 ITEM NOMENCLATURE C-2A(R) Series Modification					
Program Element for Code B Items:								Other Related Program Elements					
	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
QTY													
COST (In Millions)	(68.4)	A	(15.5)	20.4	17.8	19.5	7.2	10.8	15.8	16.2	20.1	188.6	400.4
<p>This line item funds modifications to 36 C-2A(R) aircraft. The C-2A(R) Greyhound is a high wing monoplane, twin engine turbo-prop aircraft capable of operating from both a shore base and all operational USN aircraft carrier classes. The mission of the C-2A(R) is to provide rapid response Carrier Onboard Delivery (COD) of fleet essential supplies, repair parts, and personnel to sustain at sea operations of deployed battle groups. In addition, the C-2A(R) provides airdrop delivery and mobilization support for special operations forces from land bases and carriers. The overall goal of the modifications in FY2000 is to continue initial procurement efforts for the C-2A(R) Service Life Extension Program (SLEP). The design service life of the C-2A(R) is 10,000 flight hours with 15,000 landings. The service life remaining on the aircraft is 4,000 flight hours with 4,800 landings.</p>													
(TOA, \$ in Millions)													
OSIP No.	Description	*Prior Years	*FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
23-94	C-2A GPS	(6.9)	(0.2)	0.3									7.4
24-94	C-2A SLEP	(61.5)	(15.3)	20.1	17.8	19.5	7.2	10.8	15.8	16.2	20.1	188.6	392.9
	Total	(68.4)	(15.5)	20.4	17.8	19.5	7.2	10.8	15.8	16.2	20.1	188.6	400.4
<p>Note: Totals may not add due to rounding.</p> <p>* Prior to FY 1998, funding for C-2A(R) Modifications is contained within the Cargo & Transport Aircraft Series Modification line; FY 1997 funds are reported for informational purposes only.</p>													

Exhibit P-3a		INDIVIDUAL MODIFICATION																							
MODIFICATION TITLE: <u>C-2A(R) Global Positioning System (GPS) (OSIP 23-94)</u>																									
MODELS OF SYSTEM AFFECTED: <u>C-2A(R)</u>											TYPE MODIFICATION: <u>Safety</u>														
DESCRIPTION/JUSTIFICATION: The C-2A(R) Greyhound provides the Fleet's Carrier Onboard Delivery (COD) and other missions which require long distance, over water navigation. The LTN-211 Omega System which is being phased out in the 1990s and the AN/ASN-116 AHRS, which has a documented MTBF of 17 hours, make up the current C-2A(R) navigation suite. ASD(C3I) Memo of 11 May 1988 and the Common Avionics GPS OSIP 71-88 provide the rationale and justification for procurement of GPS for Navy aircraft, including the C-2A(R). This avionics systems upgrade is required to provide both long term operability and a crucial improvement in the operational capability and safety margin of the aircraft. With a GPS integration augmented by a reliable navigation system, CAINS II, the C-2A(R) will be able to perform its COD and other special operations critical to Fleet support beyond CY2000. This OSIP also rectifies several of the documented deficiencies in the final C-2A(R) INSURV report (Serial #9203021 of 2 March 1992).																									
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Development and operational testing on the C-2A(R) has been successfully completed.																									
FINANCIAL PLAN (TOA, \$ in Millions):																									
	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
GPS Kits	36	1.4																					36	1.4	
Installation Kits N/R																									
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data		0.7																							0.7
Training Equipment	3	2.9																							2.9
Support Equipment		0.2																							0.2
Integrated Logistics Support		0.6																							0.6
Other Support																									
Interim Contractor Support																									
Installation Cost	26	1.2	4	0.2	6	0.3																	36	1.7	
TOTAL PROCUREMENT		6.9		0.2		0.3																			7.4

Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: C-2A(R) MODIFICATION TITLE: C-2A(R) Global Positioning System (GPS) (OSIP 23-94)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation during Standard Depot Level Maintenance (SDLM) augmented by Drive In Modification and Field Modification Teams at the Naval Aviation Depot (NADEP).

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 15 Months

CONTRACT DATES: FY 1998: N/A FY 1999: N/A FY 2000: N/A

DELIVERY DATE: FY 1998: N/A FY 1999: N/A FY 2000: N/A

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2002		FY 2003		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (36) kits	26	1.2	4	0.2	6	0.3																		36	1.7
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
To Complete () kits																									
TOTAL	26	1.2	4	0.2	6	0.3																		36	1.7

Installation Schedule

	FY 1997	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
	& Prior	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	30	2	2	2																						
Out	30	2	2	2																						

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In									0	36
Out									0	36

Exhibit P-3a Individual Modification

MODIFICATION TITLE: C-2A(R) Block Upgrade/Service Life Extension Program (OSIP 24-94)

MODELS OF SYSTEMS AFFECTED: C-2A(R) Aircraft TYPE MODIFICATION: SAFETY/SLEP

DESCRIPTION/JUSTIFICATION:

In accordance with ORD 352-88-94 the C-2A(R) Block Upgrade/SLEP will permit extended operations of the total active inventory of 36 aircraft providing the Navy's Carrier Onboard Delivery (COD) beyond its current projected service life. It will also provide for the installation of avionics systems required to improve performance and preclude obsolescence during the extended life of this critical Fleet asset. At least two C-2A(R) will reach 100% of fatigue life in 2000, over three quarters of the aircraft will be grounded by CY 2005. This OSIP will ensure that the impact on COD operations is minimized. Usage analyses under a Full Scale Fatigue Test shows that airframe structural life including that of Outer Wing Panels (OWPs) will be less than designed life. This OSIP will provide for OWP structural Airframe Change (AFC) enhancements starting in FY1998. In addition to the service life structural changes, this upgrade will replace and/or install systems and components (L-Probe/VSI, CAINS II, ARC-210 radios, full face O2 mask, and aircraft wiring) which are documented deficiencies as noted in the final C-2A(R) INSURV report. It is planned that the CAINS II and ARC-210 radio modifications will be installed on an accelerated basis in advance of the other SLEP changes.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Development and operational testing (DT and OT) have been completed for the avionics systems included in this OSIP. DT and OT of the various modifications for the SLEP systems in the C-2A(R) began in FY 1997 and will complete in FY 2003.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
L-Probe Kit	2	*	9	0.1	14	0.1	11	0.1																36	0.2
CAINS II A Kit	2	0.3	9	0.8	14	1.2	11	1.0																36	3.2
ARC-210 Kit							1	0.1	1	0.1	17	0.6	17	0.6										36	1.4
Rewire Kit													1	0.7	3	2.0	2	1.4	4	2.7	26	18.8	36	25.6	
Structure Kit													1	2.8	3	8.9	2	6.1	4	12.0	26	86.3	36	116.1	
O2 Mask Kit													1	*	3	0.1	2	*	4	0.1	26	0.6	36	0.7	
Enhanced OWP Kit					2	4.2	3	6.4	3	6.6														8	17.2
OWP Enhancement Kit									10	1.3	10	1.3	8	1.1										28	3.7
OWP Conversion Kit					3	0.5	8	1.2	3	0.5														14	2.1
Installation Kits N/R		12.9		2.9		2.0																			17.8
Installation Equipment CAINS II					14	1.5																		14	1.5
Installation Equipment N/R		3.7		0.3		0.2		0.2		0.1															4.5
Engineering Change Orders																									
Data		1.5		1.3		1.4		1.7		2.1		1.0		0.8				0.4							10.1
Training Equipment		0.8				0.6		1.3		1.3		0.2													4.3
Support Equipment		0.5		0.3																					0.8
ILS		0.5		0.6		0.7		0.6		0.7		0.3		0.6									0.8		4.7
Other Support		41.2		9.0		6.7		3.4		3.6		1.9		2.2		2.0		1.1		0.3		3.0			74.2
Interim Contractor Support																									
Installation Cost	2	0.1	2	0.1	18	1.2	28	1.9	33	3.3	11	1.9	25	2.0	20	2.9	9	7.3	6	4.9	90	79.2	244	104.7	
Total Procurement		61.5		15.3		20.1		17.8		19.5		7.2		10.8		15.8		16.2		20.1		188.6		392.9	

- Notes:
1. Totals may not add due to rounding
 2. Asterisk indicates amount less than \$50K
 3. Enhanced OWP Kit and OWP Conversion Kit installed by fleet.
 4. In FY98, funding for 14 CAINS II B Kits were reprogrammed to the C-2A Program from the Common Avionics Program.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: **C-2A(R)**

MODIFICATION TITLE: Block Upgrade/SLEP (OSIP 24-94) - Structure/ Rewire/ O2 Mask

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor

ADMINISTRATIVE LEADTIME: 1 Months

PRODUCTION LEADTIME: 11 Months

CONTRACT DATES: FY 1998: N/A

FY 1999: N/A

FY 2000: N/A

DELIVERY DATE: FY 1998: N/A

FY 1999: N/A

FY 2000: N/A

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1998 & PY () kits																										
FY 1999 () kits																										
FY 2000 () kits																										
FY 2001 () kits																										
FY 2002 (3) kits															3	2.4								3	2.4	
FY 2003 (9) kits																	9	7.3						9	7.3	
FY 2004 (6) kits																			6	4.9				6	4.9	
FY 2005 (12) kits																					12	10.2		12	10.2	
To Complete (78) kits																							78	69.0	78	69.0
TOTAL															3	2.4	9	7.3	6	4.9	90	79.2	108	93.8		

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In																										
Out																										

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	9				6				90	108
Out	9				6				90	108

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: C-2A(R) MODIFICATION TITLE: Block Upgrade/SLEP (OSIP 24-94) - CAINS II / L-Probe

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Navy Field Modification Team (FMT)

ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 7 Months

CONTRACT DATES: FY 1998: May-98 FY 1999: Mar-99 FY 2000: N/A

DELIVERY DATE: FY 1998: Dec-98 FY 1999: Oct-99 FY 2000: N/A

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (50) kits	2	*	2	0.1	18	1.2	28	1.9																50	3.2
FY 1999 (22) kits									22	1.5														22	1.5
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	2	*	2	0.1	18	1.2	28	1.9	22	1.5														72	4.7

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	4			9	9	6	6	8	8	6	8	8														
Out	4				9	9	6	6	8	8	6	8	8													

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										72
Out										72

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: **C-2A(R)**

MODIFICATION TITLE: Block Upgrade/SLEP (OSIP 24-94) - ARC-210 Radios

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Navy Field Modification Team (FMT)

ADMINISTRATIVE LEADTIME: 3 Months

PRODUCTION LEADTIME: 9 Months

CONTRACT DATES: FY 1998: N/A

FY 1999: Jan-99

FY 2000: Jan-00

DELIVERY DATE: FY 1998: N/A

FY 1999: Oct-99

FY 2000: Oct-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 (1) kits									1	*														1	*
FY 2000 (1) kits											1	*												1	*
FY 2001 (17) kits													17	0.5										17	0.5
FY 2002 (17) kits															17	0.5								17	0.5
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL									1	*	1	*	17	0.5	17	0.5								36	0.9

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In										1				1				5	4	4	4	5	4	4	4
Out										1				1				5	4	4	4	4	5	4	4

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										36
Out	4									36

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: **C-2A(R)**

MODIFICATION TITLE: Block Upgrade/SLEP (OSIP V24-94) - Outer Wing Panel Enhancement

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Navy Forced Retrofit Component

ADMINISTRATIVE LEADTIME: 1 Months

PRODUCTION LEADTIME: 4 Months

CONTRACT DATES: FY 1998: N/A

FY 1999: N/A

FY 2000: Oct-99

DELIVERY DATE: FY 1998: N/A

FY 1999: N/A

FY 2000: Feb-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 () kits																									
FY 2000 (10) kits									10	1.8														10	1.8
FY 2001 (10) kits											10	1.7												10	1.7
FY 2002 (8) kits													8	1.4										8	1.4
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL									10	1.8	10	1.7	8	1.4									28	5.0	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In											3	3	4		3	3	4		3	3	2				
Out											3	3	4		3	3	4		3	3	2				

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										28
Out										28

Exhibit P-40, BUDGET ITEM JUSTIFICATION											DATE: February 1999																						
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications								P-1 ITEM NOMENCLATURE C/KC-130 SERIES MODIFICATIONS																									
Program Element for Code B Items:								Other Related Program Elements																									
	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total																				
QTY		A																															
COST (In Millions)	85.3	A	2.7	20.3	4.0	15.3	8.0	6.1	3.5	2.4	2.4	5.6	155.6																				
<p>This item funds modifications to C/KC-130 aircraft. The Lockheed C/KC-130 aircraft is a four engine, high-wing, all metal, long range, land based monoplane capable of all weather transport of cargo or personnel and in-flight refueling. The majority of the modifications budgeted in FY2000 and beyond is to correct safety deficiencies. There are currently 99 aircraft in the Navy and Marine Corps inventory (51 active and 48 reserve). The expected Service Life is as follows:</p> <table border="1"> <thead> <tr> <th>T/M/S</th> <th>Service Date</th> <th>Service Life</th> <th>Expected Life</th> </tr> </thead> <tbody> <tr> <td>C-130T</td> <td>10/91 - 11/95</td> <td>450 mos.</td> <td>2028-2032</td> </tr> <tr> <td>KC-130F</td> <td>3/60 - 11/62</td> <td>504 mos.</td> <td>2002-2004</td> </tr> <tr> <td>KC-130R</td> <td>9/75 - 6/78</td> <td>432 mos.</td> <td>2011-2014</td> </tr> <tr> <td>KC-130T</td> <td>4/84 - 2/96</td> <td>450 mos.</td> <td>2021-2033</td> </tr> </tbody> </table>														T/M/S	Service Date	Service Life	Expected Life	C-130T	10/91 - 11/95	450 mos.	2028-2032	KC-130F	3/60 - 11/62	504 mos.	2002-2004	KC-130R	9/75 - 6/78	432 mos.	2011-2014	KC-130T	4/84 - 2/96	450 mos.	2021-2033
T/M/S	Service Date	Service Life	Expected Life																														
C-130T	10/91 - 11/95	450 mos.	2028-2032																														
KC-130F	3/60 - 11/62	504 mos.	2002-2004																														
KC-130R	9/75 - 6/78	432 mos.	2011-2014																														
KC-130T	4/84 - 2/96	450 mos.	2021-2033																														
(TOA, \$ in Millions)																																	
OSIP No.	Description	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total																				
70-85	Avionics Sys Impr Program (ASIP III)	58.8	0.2	3.0									61.9																				
02-92	ARC-210 Radio System	3.4	0.6	1.0	0.2	1.3	2.0	1.5	1.2	1.0	0.9	5.6	18.6																				
25-92	Global Positioning System (GPS)	18.3	1.9	7.4	2.0	1.8							31.5																				
09-94	Night Vision Lighting (NVL)	2.9		0.2	0.2	1.4	1.0	0.9	1.0	0.9	0.9		9.4																				
39-95	Standby Attitude Indicator (SAI)	1.9	*	0.1									2.0																				
19-98	Safety Improvement Program			8.8	1.6	5.1	5.1	3.7	1.4	0.4	0.6		26.7																				
19-00	Visual Simulator					5.7							5.7																				
Total		85.3	2.7	20.3	4.0	15.3	8.0	6.1	3.5	2.4	2.4	5.6	155.6																				
RESERVE FUNDING INCLUDED IN TOTAL		1.5	1.0	3.7	1.2	2.7	2.0	1.9	0.3	0.3	0.3																						
<p>Note: Totals may not add due to rounding. * Asterisk equals amounts less than \$50k.</p>																																	

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Avionics System Improvement Program (OSIP 70-85)

MODELS OF SYSTEMS AFFECTED: C-130F, KC-130R/R/T, Trainers TYPE MODIFICATION: Performance Enhancement (HONA Category C)

DESCRIPTION/JUSTIFICATION: The older C/KC-130F/R/T aircraft were equipped with old vacuum tube electronics and early 1950's technology. These systems are expensive to maintain in money and manpower, including reliability. This ASIP program replaced the old equipment with the latest state-of-the-art equipment. This modification is covered by a singular ECP (C-130-56) and was incorporated in the oldest 62 aircraft of the 99 aircraft in inventory (54 active and 8 reserve). The systems to be installed are: (1) Solid State Propeller synchronization, (2) Compass System, (3) Combined Altitude Radar Altimeter (CARA), (4) Engine Instruments, (5) Flight Director, (6) Ground Proximity Warning System, and (7) Autopilot Improvement. These systems provide a substantial increase in safety, reliability, and maintainability. This program is baseline for the GPS program (OSIP 25-92). ORD was not required in FY85.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: With the conclusion of the FY 1998 installations, this modification is complete.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Kit	62	7.7																						62	7.7
Installation Kits N/R		7.7																							7.7
Installation Equipment																									
Equip	62	25.2																						62	25.2
Installation Equipment N/R																									
Engineering Change Orders																									
Data		1.7																							1.7
Training Equipment	1	2.7																						1	2.7
Support Equipment		2.3																							2.3
ILS		2.4																							2.4
Other Support		0.8				0.1																			0.8
Interim Contractor Support																									
Installation Cost	31	8.2	1	0.2	6	2.9																		38	11.3
Total Procurement		58.8		0.2		3.0																			61.9

Notes:

1. Totals may not add due to rounding

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED C-130F, KC-130F/R/T MODIFICATION TITLE: Avionics System Improvement Program (ASIP III) (OSIP 70-85)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Organic and DLA Administered commercial non-CONUS (Singapore) DIM

ADMINISTRATIVE LEADTIME: N/A Months PRODUCTION LEADTIME: N/A Months

CONTRACT DATES FY 1998: N/A FY 1999: N/A FY 2000: N/A

DELIVERY DATE: FY 1998: N/A FY 1999: N/A FY 2000: N/A

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (38) kits	31	8.2	1	0.2	6	2.9																		38	11.3
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	31	8.2	1	0.2	6	2.9																		38	11.3

Note: 21 kits were installed prior to FY91 with funding outside this OSIP.

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	32	2	2	1	1																					
Out	32		2	2	1	1																				

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										38
Out										38

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: AN/ARC-210(V) ECCM RADIO (OSIP 02-92)

MODELS OF SYSTEMS AFFECTED: C-130T, KC-130F/R/T TYPE MODIFICATION: Performance Enhancement (HONA Category C)

DESCRIPTION/JUSTIFICATION: The AN/ARC-210 is a combination UHF/VHF, AM/FM jam-resistant radio that was developed to allow for EP interoperability with the Air Force, Army and NATO. The radio provides dual UHF capability for CV based TACAIR; VHF FM for close air support and maritime channels; VHF AM for air traffic control; and EP capabilities using the Air Force developed waveforms (UHF-AM HAVEQUICK I and II), and the Army developed waveform (VHF-FM SINCGARS). The AN/ARC-210 can be controlled by either a remote control unit or via a MIL-STD-1553 multiplex data bus. The EP parameters and single channel preset information can be loaded via a CYZ-10 Data Transfer Device (DTD). The fill information can consist of word-of-day for HAVEQUICK; the KGV-10 transec variable, hopsets and frequency lock-out tables for SINCGARS. Baseline for this program is GPS (OSIP 25-92). This modification is covered by a singular ECP (C-130-99) and will be incorporated in 93 C-130 aircraft (45 active and 48 reserve). This modification was approved 20 Apr 93, ORD 333-06-093.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The AN/ARC-210 radio replaces the AN/ARC-159 radios in the C-130 aircraft. Validation/verification was performed during FY 1994-FY 1996. FOT&E completed in February 1997 for the KC-130T configuration, and was performed in FY97 for the KC-130F and KC-130R configurations. Recurring production installations started in April 1997. Starting in FY99, install costs include SATCOM capability installation in 10 aircraft.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Kit	11	0.7	5	0.3	5	0.4			13	0.8	10	0.6	6	0.4	6	0.4	4	0.3	4	0.3	29	2.3	93	6.5	
Installation Kits N/R		0.8																						0.8	
Installation Equipment																									
Equip		0.4																						0.4	
Installation Equipment N/R																									
Engineering Change Orders																									
Data		0.1		*		0.1																		0.2	
Training Equipment			1	0.1																			1	0.1	
Support Equipment		0.0																						0.0	
ILS		0.2				0.1																		0.2	
Other Support		0.5		*		*				0.2		0.2		0.2		0.2		0.2		0.2		0.2		1.9	
Interim Contractor Support																									
Installation Cost	6	0.7	5	0.3	5	0.4	2	0.2	3	0.3	13	1.2	10	0.9	6	0.6	6	0.6	4	0.4	34	3.1	94	8.5	
Total Procurement		3.4		0.6		1.0		0.2		1.3		2.0		1.5		1.2		1.0		0.9		5.6		18.6	

Notes:

- Totals may not add due to rounding
- Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED C-130T, KC-130F/R/T

MODIFICATION TITLE: AN/ARC-210(V) ECCM RADIO (OSIP 02-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation will be accomplished by Organic/Commercial FMT (2 radios per aircraft).

ADMINISTRATIVE LEADTIME: 2 Months

PRODUCTION LEADTIME: 10 Months

CONTRACT DATES FY 1998: Dec-97

FY 1999: _____

FY 2000: Dec-99

DELIVERY DATE: FY 1998: Oct-98

FY 1999: _____

FY 2000: Oct-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (22)* kits	6	0.7	5	0.3	5	0.4	2	0.2	3	0.3	1	0.1												22	2.0
FY 1999 () kits																									
FY 2000 (13) kits										12	1.1	1	0.1											13	1.2
FY 2001 (10) kits												9	0.8	1	0.1									10	0.9
FY 2002 (6) kits														5	0.5	1	0.1							6	0.6
FY 2003 (6) kits																5	0.5	1	0.1					6	0.6
FY 2004 (4) kits																		3	0.3	1	0.1			4	0.4
FY 2005 (4) kits																						4	0.3	4	0.3
To Complete (29) kits																						29	2.6	29	2.6
TOTAL	6	0.7	5	0.3	5	0.4	2	0.2	3	0.3	13	1.2	10	0.9	6	0.6	6	0.6	4	0.4	34	3.0	94	8.4	

* Includes 1 Trainer install in FY97

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	11	2	2	1		1	1			1	1	1		4	4	3	2	3	3	2	2	2	2	1	1
Out	11		2	2	1		1	1			1	1	1		4	4	3	2	2	3	2	2	2	2	1

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	2	2	1	1	2	1	1		34	94
Out	1	2	2	1	1	2	1	1	34	94

Exhibit P-3a Individual Modification

MODIFICATION TITLE: C/KC-130 GLOBAL POSITIONING SYSTEM (GPS) (OSIP 25-92)

MODELS OF SYSTEMS AFFECTED: C-130T, KC-130F/R/T, TC-130G TYPE MODIFICATION: Safety & Congressional Mandate (HONA Category A)

DESCRIPTION/JUSTIFICATION: DOD aircraft currently operate within the National Airspace System using TACAN/DME as primary navigation aids. The Federal Radio navigation Plan states that the DOD intends to phase out the use of land based TACAN/DME. DOD policy prescribes that GPS will be installed to allow it to be used as the aircraft's sole navigation aid for enroute, terminal, and approach phases of flight and that the use of GPS will be essentially transparent to the existing air traffic control system. To implement this policy and to provide for an efficient transition from TACAN/DME, GPS must be integrated into DOD aircraft in a manner which permits emulation of TACAN/DME procedures. Baseline for this program is ASIP III (OSIP 70-85). This modification is covered by a singular ECP (C-130-98) and will be incorporated in 94 aircraft (46 active and 48 reserve). This is a joint service modification approved 22 Jan 90, ORD USAF 003-78, I/II/III.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The Coast Guard HC-130 and Navy KC-130 integration development is a joint program intended to minimize costs and maximize system knowledge. Prototype installations using SPAWAR furnished assets commenced in September 1993, immediately followed by the KC-130 installations. Both aircraft were successfully tested at NAWC Patuxent River which became the basis for the VAL/VERS which began in the third quarter FY 1994. Trial kits completed in the fourth quarter in FY 1995. Recurring installs started FY 1996 and will be completed during FY 2000.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E																								
PROCUREMENT																								
Installation Kits																								
Install Kit	44	5.5	4	0.5	46	4.9																	94	11.0
Installation Kits N/R		4.7		0.1		0.1																		5.0
Installation Equipment																								
Equip		1.2																						1.2
Installation Equipment N/R																								
Engineering Change Orders																								
Data		1.2				0.4																		1.5
Training Equipment	4	3.1																					4	3.1
Support Equipment																								
ILS		0.4				*																		0.5
Other Support		0.5		0.2		0.6		0.2		0.1														1.5
Interim Contractor Support																								
Installation Cost	18	1.6	14	1.1	17	1.3	25	1.9	24	1.7													98	7.7
Total Procurement		18.3		1.9		7.4		2.0		1.8														31.5

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED C-130T, KC-130F/R/T, TC-130G MODIFICATION TITLE: Global Positioning System (GPS) (OSIP 25-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Commercial/Organic Field Mod Team

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 9 Months

CONTRACT DATES FY 1998: Feb-98 FY 1999: N/A FY 2000: N/A

DELIVERY DATE: FY 1998: Nov-98 FY 1999: N/A FY 2000: N/A

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (98) kits	18	1.6	14	1.1	17	1.3	25	1.9	24	1.7														98	7.7
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	18	1.6	14	1.1	17	1.3	25	1.9	24	1.7													98	7.7	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	32	4	4	4	5	7	6	6	6	6	6	6	6												
Out	32		4	4	4	5	7	6	6	6	6	6	6	6											

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										98
Out										98

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: KC-130 NIGHT VISION LIGHTING (NVL) (OSIP 09-94)

MODELS OF SYSTEMS AFFECTED: KC-130F/R/T AND OPS TRNR TYPE MODIFICATION Performance Enhancement (HONA Category C)

DESCRIPTION/JUSTIFICATION: The KC-130 has no NVL capability to support flight operations to accomplish tactical missions at night. The lack of a NVL capability creates significant interoperability problems with other NVG capable aircraft (i.e., in-flight refueling, assault landings, etc.). Incorporation of a non-developmental NVL system, that has been prepared for other U.S. Marine Corps/U.S. Air Force tactical aircraft and is compatible with KC-130 tactical missions and avionics, will alleviate this critical shortfall and allow the accomplishment of tactical missions without unnecessarily jeopardizing the crew's safety and the safety of the aircraft.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The initial in-production engineering change proposal to incorporate non-developmental NVL in USMCR KC-130T aircraft was funded with NG&RE. Design/development of retrofit aircraft affected by this OSIP was originally based on the KC-130T NG&RE program. Development commenced in FY 1994 with procurement of two trial kits that were installed in FY 1995. Funding constraints delayed continuation of this program. Limited funds were required in FY 1998 and will be needed in FY99 to provide Maintenance Plans and other logistics support for the aircraft already fielded. The program restarts with funding in FY00. We are investigating a joint program with the Air Force as well as a Navy contract to take advantage of technological advancements since FY 1995. We will restart this program in FY00 with non-recurring engineering and retrofit kits/installation. Program completion is expected in FY 2005.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Kit	2	0.9							4	0.5	4	0.4	4	0.4	4	0.4	3	0.3	3	0.3			24	3.2	
Installation Kits N/R		0.7								0.4							0.2							1.3	
Installation Equipment																									
Equip		0.3																						0.3	
Installation Equipment N/R																									
Engineering Change Orders																									
Data																				0.2				0.2	
Training Equipment													1	0.0									1	0.0	
Support Equipment																									
ILS		*			0.2						0.1													0.2	
Other Support		*					0.2		0.1		0.1		0.1		0.1		0.1		0.1					0.8	
Interim Contractor Support																									
Installation Cost	2	1.0							4	0.4	4	0.4	4	0.4	5	0.5	3	0.3	3	0.3			25	3.2	
Total Procurement		2.9			0.2		0.2		1.4		1.0		0.9		1.0		0.9		0.9					9.4	

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED KC-130R, KC-130T

MODIFICATION TITLE: Night Vision Lighting (NVL) (OSIP 09-94)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation will be accomplished by Contractor DIM.

ADMINISTRATIVE LEADTIME: 3 Months

PRODUCTION LEADTIME: 3 Months

CONTRACT DATE FY 1998: N/A

FY 1999: N/A

FY 2000: Dec-99

DELIVERY DATE: FY 1998: N/A

FY 1999: N/A

FY 2000: Jun 00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (2) kits	2	1.0																						2	1.0
FY 1999 () kits																									
FY 2000 (4) kits									4	0.4														4	0.4
FY 2001 (4) kits											4	0.4												4	0.4
FY 2002 (5) kits													4	0.4	1	0.1								5	0.5
FY 2003 (4) kits															4	0.4								4	0.4
FY 2004 (3) kits																	3	0.3						3	0.3
FY 2005 (3) kits																			3	0.3				3	0.3
To Complete () kits																									
TOTAL	2	1.0							4	0.4	4	0.4	4	0.4	5	0.5	3	0.3	3	0.3				25	3.2

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	2										2	2			2	2			2	2					3	2
Out	2											2	2			2	2			2	2			2	2	3

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In			2	1			2	1		25
Out	2			2	1			2	1	25

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: STANDBY ATTITUDE INDICATOR (OSIP 39-95)

MODELS OF SYSTEMS AFFECTED: C-130T, KC-130F/R/T, TC-130G, TRAINERS TYPE MODIFICATION: Safety (HONA Category A)

DESCRIPTION/JUSTIFICATION: Requirement for installation of a standby attitude gyro indicator into DON C-130 aircraft is a direct result of two Naval aviation hazard reports concerning a potential safety of flight situation. Under certain circumstances, electrical power can be lost to aircraft primary attitude instruments. No backup attitude information is currently available to the aircraft models listed. This OSIP provides the backup attitude information needed to avoid a potentially dangerous deficiency. This change is considered safety in nature and incorporates a singular ECP (C-130-106) on 98 aircraft and 4 trainers (50 active and 48 reserve).

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The standby attitude indicator, part number 501-1533-51, is fully developed and available in the supply system. The indicator will be a part of the installation kit. Technical Directive trial kits (validation/verification) completed first quarter FY95. Recurring installs by contractor field mod teams were completed on 95 aircraft during FY96. Two non-CONUS aircraft were modified in FY97. The trainers and one remaining aircraft that was unavailable will be modified during FY98 to complete the program.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Install Kit	102	1.2																					102	1.2	
Installation Kits N/R		0.3																						0.3	
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data			*																					0.0	
Training Equipment																									
Support Equipment																									
ILS			*																					0.0	
Other Support			*																					0.0	
Interim Contractor Support																									
Installation Cost	95	0.4	2	*	5	0.1																	102	0.5	
Total Procurement		1.9		*		0.1																		2.0	

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED C-130T, KC-130F/R/T, TC-130G MODIFICATION TITLE: STANDBY ATTITUDE INDICATOR (OSIP 39-95)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Teams/Depot installs

ADMINISTRATIVE LEADTIME: N/A Months PRODUCTION LEADTIME: N/A Months

CONTRACT DATES FY 1998: N/A FY 1999: N/A FY 2000: N/A

DELIVERY DATE: FY 1998: N/A FY 1999: N/A FY 2000: N/A

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (102) kits	95	0.4	2	*	5	0.1																		102	0.5
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	95	0.4	2	*	5	0.1																		102	0.5

Note: FY 1998 installs include 4 trainers.

Installation Schedule

	FY 1997	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
	& Prior	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	97		1	4																						
Out	97			1	4																					

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										102
Out										102

Exhibit P-3a Individual Modification

MODIFICATION TITLE: SAFETY IMPROVEMENT PROGRAM (OSIP 19-98)

MODELS OF SYSTEMS AFFECTED: C-130T, KC-130F/R/T, TC-130G/Q, TRAINERS TYPE MODIFICATION Safety (HONA Category A)

DESCRIPTION/JUSTIFICATION: This OSIP represents several safety related modifications to various C-130 aircraft.

1. Bleed Air Ducts/Overheat Detection System (ODS). During FY98, a modification was begun to replace critical bleed air ducts and install an improved Overheat Detection System. The bleed air system uses high pressure and high temperature bleed air from the compressor of all engines to pressurize the fuselage, provide heating and air conditioning, remove ice from the wings and tail section, and many other uses. Bleed air duct failures are the top emerging hazard to safe operations of C/KC-130 aircraft in the Department of the Navy. Leaks in the system, often undetected, can cause severe heat damage. This modification replaces bleed air ducts in 56 older aircraft (46 active and 10 reserve), using inconel ducts wherever available. To identify potential failures, this modification also installs an improved overheat detection system in 94 aircraft (46 active and 48 reserve). This system consists of a continuous loop sensor wire that will provide real time bleed air leak detection warnings to flight crews. The system will detect overheat conditions occurring in hidden structural areas and allow the crew to control serious collateral heat damage.
2. Propeller Valve Housing. Older model prop valve housing governors fail during flight causing the engine to be shut down. The replacement governor uses a dual bearing configuration which greatly reduces bearing failure. This modification is required in 94 aircraft (46 active and 48 reserve).
3. LOX Heat Exchanger. An Air Force Study, resulting from several mishaps, has determined that the existing flat plate type liquid oxygen heat exchanger is insufficient to heat the amount of oxygen necessary to support the full crew in the event of a mishap requiring 100% oxygen. A higher capacity coil type heat exchanger is required. This modification removes the flat plate type and replaces it with a coil type heat exchanger. It is required on the 48 reserve aircraft.
4. IFR Pump Replacement. On 7 March 1997, a fire inside a fuselage tank during aerial refueling of a F-18 aircraft brought attention to a deficiency with the design of the current IFR pump. Investigation revealed three similar incidents with USN and USMC aircraft caused by a design deficiency in the sealed upper bearing that allows it to overheat. The replacement pump offers many improvements over the existing pump including a sealed flash proof upper bearing. This modification effects 73 aircraft (45 active and 28 reserve).

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

1. Bleed Air Duct/Overheat Detection System. Non-recurring engineering and design as well as procurement of the kits begins in FY98 via a turn-key contract with the OEM (Lockheed). Validation/verification is expected during second quarter FY99. Recurring installs began FY99.
2. Propeller Valve Housing. Investigation toward solution already accomplished. Purchase of all new prop valve housings to be accomplished via contract in FY00. Installations will be accomplished FY01/02.
3. LOX Heat Exchanger. Program will be initiated during 1st quarter FY00. Validation/verification expected 2nd quarter with recurring installs complete by the end of FY00.
4. IFR Pump Replacement. Non-recurring engineering will begin FY00. Validation/Verification expected by 2nd quarter FY01 with recurring installations to begin 3rd quarter FY01.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Bleed Air Ducts Kit					39	3.8	9	0.8	8	0.6														56	5.2
ODS Kit					39	2.1	9	0.4	15	0.5	22	0.6	9	0.5										94	4.1
Prop Valve Kit									94	2.3														94	2.3
LOX Heat Exchanger									48	0.2														48	0.2
IFR Pump										5	0.2	40	1.8	22	1.0	3	0.2	3	0.1					73	3.4
Installation Kits N/R						0.1			0.2	0.2		0.4			0.0										0.9
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data									0.2	0.2		0.4								0.2					1.0
Training Equipment										0.2															0.2
Support Equipment																									
ILS						*																			*
Other Support						0.1		0.1	0.4	0.3		0.3			0.3		0.3		0.3					2.1	
Interim Contractor Support																									
Installation Cost					78	2.7	18	0.3	71	0.7	121	3.2	49	0.3	22	0.0	3	0.0	3	0.0				365	7.2
Total Procurement						8.8		1.6		5.1		5.1		3.7		1.4		0.4		0.6					26.7

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: C-130T, KC-130F/R/T, TC-130G/Q MODIFICATION TITLE: Bleed Air Ducts/Overheat Detection System (OSIP 19-98)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Team as part of a turn-key contract

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 3 Months

CONTRACT DATES: FY 1998: Jun-98 FY 1999: Nov-98 FY 2000: Nov-99

DELIVERY DATE: FY 1998: Sep-98 FY 1999: Feb-99 FY 2000: Feb 00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1998 & PY (78) kits					78	2.7																		78	2.7	
FY 1999 (18) kits							18	0.3																	18	0.3
FY 2000 (23) kits									23	0.5															23	0.5
FY 2001 (22) kits											22	0.4													22	0.4
FY 2002 (9) kits													9	0.2											9	0.2
FY 2003 () kits																										
FY 2004 () kits																										
FY 2005 () kits																										
To Complete () kits																										
TOTAL					78	2.7	18	0.3	23	0.5	22	0.4	9	0.2										150	4.1	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In					78	6	6	6		6	6	6	5	6	6	5	5	3	3	3					
Out						78	6	6	6		6	6	6	5	6	6	5	5	3	3	3				

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										150
Out										150

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: C-130T, KC-130F/R/T MODIFICATION TITLE: IFR Refueling Pump and LOX Heat Exchanger (OSIP 19-98)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Teams

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 4 Months

CONTRACT DATES: FY 1998: _____ FY 1999: _____ FY 2000: Nov-99

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: Feb 00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 () kits																									
FY 2000 (48) kits									48	0.2														48	0.2
FY 2001 (5) kits											5	*												5	0.0
FY 2002 (40) kits													40	0.1										40	0.1
FY 2003 (22) kits															22	*								22	*
FY 2004 (3) kits																	3	*						3	*
FY 2005 (3) kits																			3	*				3	*
To Complete () kits																									
TOTAL									48	0.2	5	*	40	0.1	22	*	3	*	3	*			121	0.3	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In										12	12	12	12	2	2	1		10	10	10	10	8	7	7		
Out										12	12	12	12	12	2	2	1	1	10	10	10	10	10	8	7	7

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	1	1	1		1	1	1			121
Out	1	1	1	1	1	1	1			121

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: C-130T, KC-130F/R/T MODIFICATION TITLE: Prop Valve Housing (OSIP 19-98)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Depot Field Mod Team

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 10 Months

CONTRACT DATES: FY 1998: _____ FY 1999: _____ FY 2000: Nov 99

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: Sep 00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 () kits																									
FY 2000 (94) kits											94	2.8												94	2.8
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL											94	2.8												94	2.8

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In														24	24	24	22								
Out															24	24	24	22							

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										94
Out										94

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Visual Simulator (OSIP 19-00)

MODELS OF SYSTEMS AFFECTED: KC-130R Visual Simulator (2F107) TYPE MODIFICATION: Performance Enhancement (HONA Category C)

DESCRIPTION/JUSTIFICATION: Funds are provided to replace the visual system on the visual flight simulator located at El Toro (being moved to Miramar via BRAC). The existing system is fifteen years old. It is no longer supported by the OEM. Reliability and maintainability issues are the main reason for replacement. It presently cannot network with other simulators because of incompatible databases.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: This will be a competitive contract award through NAWC TSD, Orlando FL. Contract will be competed and awarded during FY00.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Kit																									
Installation Kits N/R									3.0																3.0
Installation Equipment																									
Equip																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data									0.3																0.3
Training Equipment									1	1.5														1	1.5
Support Equipment																									
ILS									*																*
Other Support									0.1																0.1
Interim Contractor Support																									
Installation Cost									1	0.7														1	0.7
Total Procurement									5.7															5.7	

- Notes:
1. Totals may not add due to rounding
 2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED **Simulator (2F107)**

MODIFICATION TITLE: Visual Simulator

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Turn Key Contract for NRE, procurement, and installation.

ADMINISTRATIVE LEADTIME: 6 Months

PRODUCTION LEADTIME: 4 Months

CONTRACT DATES FY 1998: _____ FY 1999: _____ FY 2000: May-01

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: Sep-01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 1998 & PY (1) kits									1	0.7													1	0.7
FY 1999 () kits																								
FY 2000 () kits																								
FY 2001 () kits																								
FY 2002 () kits																								
FY 2003 () kits																								
FY 2004 () kits																								
FY 2005 () kits																								
To Complete () kits																								
TOTAL									1	0.7													1	0.7

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In													1												
Out													1												

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										1
Out										1

CLASSIFICATION UNCLASSIFIED

BUDGET ITEM JUSTIFICATION SHEET
P-40

DATE:
February 1999

APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications									P-1 ITEM NOMENCLATURE FEWSG Series Modifications				
Program Element for Code B Items: 0204575N									Other Related Program Elements				
	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
QUANTITY													
COST (In Millions)	107.4		0.6	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.7	5.3	118.3

This line item funds modifications to several aircraft and equipment. The overall goal of the budgeted modifications is to accurately simulate the known and postulated electronic warfare characteristics and tactics of different threats for fleet training. The AN/ALQ-170 (OSIP 14-85) equipment was installed and carried aboard the EP-3J and NKC-135A, with plans for future carriage on F/A-18 and Lear Jets. AN/ALQ-170 was phased out in FY97. OSIP 119-83 FEWSG equipment, AN/DLQ-3, AN/AST-6(V), AN/ULQ-21 and AN/ALQ-167 are installed and/or carried aboard the F/A-18, EA-6B, F-14, P-3B/C, EC-24 and EP-3J.

The specific modifications budgeted and programmed are:

(TOA, \$ in Millions)

OSIP No.	Description	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
119-83	AN/DLQ-3,AN/AST-4/-6 ULQ-21,ALQ-167	54.3	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.7	5.3	65.2
14-85	ALQ-170 (VARIANT)	53.0	0.1										53.1
	TOTAL	107.4	0.6	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.7	5.3	118.3

UNCLASSIFIED

Exhibit P-3a **INDIVIDUAL MODIFICATION**

MODIFICATION TITLE: FEWSG (OSIP 119-83) AN/DLQ-3, AN/AST-4, AN/AST-6(V), AN/ULQ-21 and AN/ALQ-167

MODELS OF SYSTEM AFFECTED: N/A TYPE MODIFICATION: RELIABILITY, MAINTAINABILITY AND CAPABILITY UPGRADES

DESCRIPTION/JUSTIFICATION:
 The AN/ALQ-167 pods internal components are also installed internally in aircraft. When these components are utilized in this type of installation, they are nomenclatured AN/DLQ-3. The AN/AST-4 and AN/AST-6(V) pods electronically simulate several types of threat anti-ship missile seeker systems. These podded devices were first introduced into the fleet in 1980 and proved exceptionally useful in readiness exercises. This program provides for the procurement and initial support of additional quantities of these pods for use by logistic support squadrons and other operational fleet units. No aircraft modifications are required to use these pods.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:
 The objective for the AN/ALQ-167 is 186 pods, there are currently 146. There are 25 AN/AST-6(V) production assets. The objective is to achieve a total of 50 pods. The current inventory for the AN/AST-4 is 25. Beginning in FY 1986, the AN/ALQ-167 and AN/AST-4 underwent improvements which enabled simulation of the current and near-term threats. The AN/ALQ-167 avionics are being upgraded. When these upgraded avionics are internally installed in aircraft, they are nomenclatured as AN/ULQ-21 systems. The AN/AST-4 has received an upgraded transmitter and is being integrated into a high-speed capable pod. This upgraded AN/AST-4 received an AN/AST-6(V) nomenclature designation in May 1987. Approval for full production will not be required for these pod modifications. RDT&E funding in FY 1998 and out is required to provide continued development of pod variants and/or upgrades based on the evolving threats to be simulated in response to the latest intelligence reports and foreign system exploitations.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E		11.1		0.4		2.2		2.3		0.6		0.7		0.6		0.0		0.0		0.0		0.0			17.9
PROCUREMENT																									
Installation Kits																								0.0	0.0
Installation Kit - Unit Price																									
Installation Kits N/R																									0.0
Installation Equipment	996	48.0	2	0.3	2	0.5	2	0.5	2	0.5	2	0.5	2	0.6	2	0.6	2	0.6	2	0.6	25	4.8	1,037		57.6
Installation Equipment N/R		0.1		0.1		*		*		*		*		*		*		*		*		0.1			0.4
Engineering Change Orders																									0.0
Data				0.1		*		*		*		*		*		*		*		*		0.1			0.3
Training Equipment		0.2																							0.2
Support Equipment		5.2																							5.2
ILS		0.6		0.1		*		*		*		*		*		*		*		*		0.2			1.2
Other Support		0.2		*																					0.2
Interim Contractor Support																									0.0
Installation Cost																									0.0
TOTAL PROCUREMENT		54.3		0.5		0.5		0.6		0.6		0.6		0.7		0.7		0.7		0.7		5.3			65.2

Totals may not add due to rounding.

* Asterisk reflects dollars less than \$50K.

Exhibit P-3a

MODIFICATION TITLE: FEWSG (OSIP 14-85) Simulator Set, Countermeasures, AN/ALQ-170 Variants

MODELS OF SYSTEM AFFECTED: Various

TYPE MODIFICATION: RELIABILITY, MAINTAINABILITY AND CAPABILITY UPGRADES

DESCRIPTION/JUSTIFICATION:

The Fleet Information Warfare Center (FIWC), formerly the Command and Control Warfare Groups (C2WG) Atlantic and Pacific, and the Fleet Electronic Warfare Support Group (FEWSG), under the administrative and operational control of CINCLANTFLT provides support with organic resources to both Atlantic and Pacific Fleets. FIWC is the nucleus of the Navy's EW "Aggressor" forces. It employs tactics, procedures, equipment, vans, and specially configured aircraft with pods which simulate a hostile electromagnetic threat environment during Fleet Readiness Exercises and fleet operational training.

Initiation of the AN/ALQ-170 Performance Enhancement Program (ALQ-170 PEP) commenced in FY 1996 with the development effort. The PEP increases the flexibility of the ALQ-170(V) system by modernizing 1970's vintage components, reducing overall weight and allowing for integration in F/A-18 aircraft for carrier deployed support of battle group training operations. **PR99 budget cuts resulted in removal of APN funding for FY 1998 and out, therefore, all milestones have been cancelled.**

As set forth in the FEWSG Master Plan (Rev 5/91) and re-emphasized by CINCLANTFLT (message 142144ZMAY 92), a new series of missile simulators was required to provide dual-mode capability. Because of the threat to the fleet that dual-mode missiles present, a dual-mode missile simulator was required to provide fleet personnel with training in countering simulated threats. This new capability would have provided realistic Anti-Ship Missile Defense (ASMD) training for fleet exercises.

This program planned for the procurement, modification, and initial support for variants of the basic AN/ALQ-170 Countermeasures Simulator Set. These variants were to incorporate dual-mode capability improvements and other state-of-the-art improvements which are needed to keep pace with new ASM threat data. Each variant would have expanded the capability of the AN/ALQ-170 to cover one particular threat or family of threats. Major components of these variant simulators were to be totally interchangeable with those of the basic AN/ALQ-170. In addition, the simulators would have been compatible with current follow-on C2WG aircraft, which have been adapted to carry the AN/ALQ-170.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

As a result of PR99 decisions, development of the PEP has ceased. A "restart" package will be completed to capture: lessons learned, the performance specification, cost and analysis data, if funding for the PEP is restored.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E		8.0		0.8		0		0		0		0		0		0		0		0		8.8
PROCUREMENT																						
Installation Kits	2.0	0.1																			2.0	0.1
Installation Kit - Unit Price																						
Installation Kits N/R		0.4																				0.4
Installation Equipment	23.0	32.7																			23.0	32.7
Installation Equipment N/R		6.5																				6.5
Engineering Change Orders																						
Data		3.5																				3.5
Training Equipment		0.4																				0.4
Support Equipment		3.0																				3.0
ILS		2.6																				2.6
Other Support		2.6																				2.6
Interim Contractor Support																						
Installation Cost	10.0	1.3																			10.0	1.3
TOTAL PROCUREMENT		53.0																				53.0

Exhibit P-40, BUDGET ITEM JUSTIFICATION

DATE: **February 1999**

APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications								P-1 ITEM NOMENCLATURE Cargo & Transport Aircraft Series Modifications					
Program Element for Code B Items:								Other Related Program Elements					

	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
QTY													
COST (In Millions)	92.9	A	38.5	24.9	27.1	16.4	8.1	6.1	3.3	3.4	3.5	15.6	239.8

This line item funds modifications to the following cargo and transport aircraft: C-9B/DC-9, CT-39/G, C-20C/D, RC-12F/M, UC-12B/F/M, and for FY 1997 prior years only, C-2A(R). The C-9B/DC-9 Skytrain II, CT-39G (Sabreliner), and C-20D (Gulfstream III) are all twin jet commercial transport aircraft. The C-9B/DC-9 is capable of carrying up to 32,000 pounds of both cargo and personnel for over 3,300 nautical miles at a maximum speed of 430+ knots while the CT-39G can carry personnel and light cargo over 1,800 nautical miles at a maximum speed of 415 knots. The C-20D/G are capable of high speed transport of 13 personnel over 4,100 nautical miles at 437 knots. The RC-12F/M and UC-12B/F/M are twin turbo-prop commercial transport aircraft (King Air) capable of a variety of general purpose transport and specialized missions. They can carry 8 people up to 1,300 nautical miles at 200 knots. The overall goal of the modifications budgeted in FY 2000 is to continue the C-9B/DC-9 engine containment and Upgrade Standardization modifications, as well as the C-20D/G and C-12 flight safety upgrades; and to complete the CT-39 Global Positioning System (GPS) navigation upgrade. The specific modifications budgeted and programmed are as follows:

(TOA, \$ in Millions)

OSIP No.	Description	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
71-86	FAA Configuration Updates	11.1	0.4	2.5	1.4	0.3	0.4	0.8	0.5	0.8	0.8	1.4	20.4
23-94	C-2A Global Positioning System (GPS)	6.9	0.2										7.1
24-94	C-2A SLEP/ Block Upgrade	61.6	15.3										76.9
09-95	C-9B Global Positioning System (GPS)	7.6	6.0										13.5
10-95	C-12 Global Positioning System (GPS)	4.0	3.3	3.8	0.2								11.3
18-96	C-20D Global Positioning System (GPS)	1.7	3.3										5.0
09-97	C-9B/DC-9 Upgrade Standardization		9.2	12.9	17.3	10.2						11.7	61.4
28-97	C-12 Gear Handle Relocation		0.9										0.9
12-98	C-20 Flight Safety Upgrade			2.7	2.7	0.6							6.1
13-98	CT-39 Global Positioning System (GPS)			0.6	0.6							0.2	1.3
14-98	C-12 Flight Safety Upgrade			2.4	4.9	5.3	7.6	5.3	2.8	2.6	2.6	2.4	36.1
	Total	92.9	38.5	24.9	27.1	16.4	8.1	6.1	3.3	3.4	3.5	15.6	239.8
	Reserve funding included in Total	11.8	9.0	20.2	21.3	13.6	1.1	1.3	0.4	0.4	0.4		79.6

- Notes: 1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Federal Aviation Administration (FAA) Configuration Update (OSIP 71-86)

MODELS OF SYSTEMS AFFECTED: C-9B/DC-9/C-20D/C-20G/UC-12B/UC-12F/UC-12M/RC-12F/RC-12M/TC-12B/CT-39G TYPE MODIFICATION: SAFETY/RELIABILITY/MAINTAINABILITY

DESCRIPTION/JUSTIFICATION:
 Federal Aviation Regulations require manufacturers of commercial aircraft and associated systems/subsystems to investigate discrepant conditions, failures, and potential safety problems reported by all operators. The results of these investigations with recommended corrective action are reviewed/approved by the FAA and Navy and provided to all operators as service bulletins. Each service bulletin is a complete technical directive that provides corrective change information or detailed modification instructions. To ensure safe, reliable, FAA/Navy certified aircraft and to provide a program that will assure continued life extension at minimum cost, the Navy must maintain configuration and integrity compatible with FAA certified commercial models by incorporation of applicable service bulletins. The incorporation of certain service bulletins also serves to preclude extensive repairs/repetitive inspections. Crew equipment requirements in accordance with FAA directives and Navy requirements will be incorporated to ensure maximum safety in case of emergency. Specific modifications budgeted in this OSIP include the C-9B/DC-9 engine containment mod in FY 1997 through FY 1999 and incorporation of C-9B/DC-9, C-20, and C-12 FAA Bulletins and Directives.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:
 Service Bulletins are reviewed for possible incorporation on an as required basis. Prototype verification has been previously accomplished and approved by the FAA.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
C-9 Kits	258	4.3	10	0.1	24	0.6	11	0.4					2	0.1	1	0.1	15	0.7	15	0.7	11	0.5	347	7.5	
C-20 Kits	100	0.1			33	0.1	26	0.1			29	0.1	51	0.2	35	0.1							274	0.6	
C-12 Kits							34	0.4	24	0.3											40	0.5	98	1.1	
CT-39 Kits	111	1.1			9	0.1																	120	1.1	
Installation Kits N/R						1.0		*				*		*		0.1		0.1		0.1		*		1.3	
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data				0.1		0.1		*				*				*		*		*		*		0.2	
Training Equipment																									
Support Equipment																									
ILS						*		*				*												*	
Other Support						0.1		0.2								0.1								0.3	
Interim Contractor Support								0.1						0.1		*						0.1		0.3	
Installation Cost	469	5.7	10	0.2	66	0.6	43	0.2			81	0.3	53	0.4	36	0.1	11	0.1	11	0.1	59	0.2	839	8.0	
Total Procurement		11.1		0.4		2.5		1.4		0.3		0.4		0.8		0.5		0.8		0.8		1.4		20.4	

- Notes:
 1. Totals may not add due to rounding
 2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: C-9B/DC-9/C-20D/C-20G/UC-12B/UC-12F MODIFICATION TITLE: FAA Configuration Update (OSIP 71-86)

UC-12M/RC-12F/RC-12M/TC-12B/CT-39G

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: CONTRACTOR DEPOT

ADMINISTRATIVE LEADTIME: VARIOUS Months PRODUCTION LEADTIME: VARIOUS Months

CONTRACT DATES: FY 1998: VARIOUS FY 1999: VARIOUS FY 2000: VARIOUS

DELIVERY DATE: FY 1998: VARIOUS FY 1999: VARIOUS FY 2000: VARIOUS

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL						
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$					
FY 1998 & PY (545) kits	469	5.7	10	0.2	66	0.6																		545	6.5				
FY 1999 (71) kits							43	0.2			28	0.1													71	0.3			
FY 2000 (24) kits											24	0.1														24	0.1		
FY 2001 (29) kits											29	0.1															29	0.1	
FY 2002 (53) kits													53	0.5													53	0.5	
FY 2003 (36) kits															36	0.1												36	0.1
FY 2004 (15) kits																	11	0.1			4	*					15	0.2	
FY 2005 (15) kits																				7	0.1			8	*		15	0.1	
To Complete (51) kits																							51	0.2			51	0.2	
TOTAL	469	5.7	10	0.2	66	0.6	43	0.2			81	0.3	53	0.5	36	0.1	11	0.1	11	0.1	11	0.1	59	0.2	839	8.0			

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	479	2	32	25	7	11	11	11	10					20	20	20	21	10	23	10	10	10	9	9	8
Out	479	2	8	31	25	11	11	11	10					20	20	20	21	10	23	10	10	10	9	9	8

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	3	3	3	2	3	3	3	2	59	839
Out	3	3	3	2	3	3	3	2	59	839

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: Global Positioning System (GPS) (OSIP 10-95)

MODELS OF SYSTEMS AFFECTED: UC-12B/F/M, RC-12F/M TYPE MODIFICATION: Safety

DESCRIPTION/JUSTIFICATION: The recent crash of the U.S. Air Force CT-43 while flying a non-directional radio beacon (NDB) instrument approach has resulted in a Department of Defense initiative to ensure installation as soon as possible of GPS capability in all aircraft carrying passengers (SecDef Memo 9 April 96). UC-12 GPS installation was originally planned to meet the DOD requirement for FY-2000. Air Force and Navy program managers cooperated in an effort to identify suitable commercial GPS equipment adaptable for precision positioning capability when required. The proposed installation schedule was delayed and funding reprogrammed until authorization for procurement of commercial units was approved. ASD (C31) memorandum of October 18, 1995 granted authorization for the Navy to procure commercial GPS user equipment for Contractor Logistics Support (CLS) aircraft that are equipped with commercial avionics systems. With the reprogramming of funds as depicted below, the UC-12 program can comply with the DOD installation initiative to install GPS as soon as possible on all eighty seven (87) aircraft in the inventory which include models UC-12B/F/M and RC-12F/M. Procurement of "A" and "B" kits must be 1:1 in order to meet operational and training requirements.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The GPS program has completed phase II (Full scale engineering development). Milestone IIIA (approval for limited production) was completed in June 1986; approval for full production, Milestone IIIB, was completed January 1992.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
GPS Kits	50	4.0	124	3.3																				174	7.3
Installation Kits N/R																									
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data																									
Training Equipment																									
Support Equipment																									
ILS																									
Other Support																									
Interim Contractor Support																									
Installation Cost						138	3.8	36	0.2															174	4.0
Total Procurement		4.0		3.3		3.8		0.2																	11.3

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: UC-12B/F/M,RC-12F/M MODIFICATION TITLE: Global Positioning System (GPS) (Osip 10-95)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Team

ADMINISTRATIVE LEADTIME: N/A Months PRODUCTION LEADTIME: N/A Months

CONTRACT DATES: FY 1998: N/A FY 1999: N/A FY 2000: N/A

DELIVERY DATE: FY 1998: N/A FY 1999: N/A FY 2000: N/A

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 1998 & PY (174) kits					138	3.8	36	0.2															174	4.0
FY 1999 () kits																								
FY 2000 () kits																								
FY 2001 () kits																								
FY 2002 () kits																								
FY 2003 () kits																								
FY 2004 () kits																								
FY 2005 () kits																								
To Complete () kits																								
TOTAL					138	3.8	36	0.2															174	4.0

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In			46	46	46	12	12	12																	
Out			46	46	46		12	12	12																

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										174
Out										174

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: UPGRADE STANDARDIZATION (OSIP 9-97)

MODELS OF SYSTEMS AFFECTED: C-9B / DC-9 AIRCRAFT TYPE MODIFICATION: SAFETY / RELIABILITY / MAINTAINABILITY

DESCRIPTION/JUSTIFICATION: Urgent upgrade of avionics in all 29 C-9B / DC-9 aircraft is required for operation in controlled airspace, installation of mandated systems, and to replace obsolete, out of production systems for which the FAA certified commercial repair support is rapidly diminishing. The FAA and ICAO require updating communications, data link, and navigation systems for continued operations in controlled international airspace. Without these new COTS / NDI systems, these USMC / NAVRESFOR aircraft cannot support the CINC's for trans-oceanic and European missions, and in the near future for United States airspace. Without these critical safety features, including collision avoidance and predictive wind shear alerts, the safety of the C-9 as well as other aircraft operating in increasingly congested airspace may be jeopardized. Additionally, most of the avionics systems / components are obsolete and out of production. Replacement parts and repair facilities have been diminished as a result of commercial DC-9 operators upgrading to state of the art equipment, resulting in increased repair costs. As soon as the existing commercial stock of obsolete or out of production items is depleted, support / spares will be nonexistent. Requirements document is Mission Needs Statement N81/5U648370 of Jul 95. Lockheed ECP's 1/2/3 apply for this ACAT IVM program that passed Milestone III Approval for Full Rate Production in Jun 97.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

A. Phase I began in FY97 and is now installing a kit to provide urgently needed collision avoidance, updated radios and navigation aids simultaneously with installation of GPS navigation systems under related OSIP 9-95. Prototype installation began during FY97. Testing was completed Oct 97. Initial Operating Capability was reached Nov 97. Last aircraft is to be completed Fall 98.

B. Phase II will begin kit installations during FY99. The aircraft will be provided with the remaining needed items (predictive wind shear alert radar, enhanced ground proximity warning system, cockpit integrated computer displays). The Preliminary Design Review was completed Jun 98. The prototype and first delivery Phase II aircraft occur during FY99.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Phase I Kit			29	6.1																				29	6.1
Phase II Kit					4	3.6	14	12.6													8	7.2	26	23.4	
Installation Kits N/R				1.6		2.0		3.0		2.2													0.7		9.5
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Kit ECO				*		*		*		0.2													0.2		0.5
Data				0.2		0.3		0.4		1.0													0.2		2.1
Training Equipment				0.2		0.2		0.1		0.8													0.1		1.2
Support Equipment																									
ILS				0.1		*		*		0.1															0.2
Other Support																									
Interim Contractor Support																									
Installation Cost				4	1.1	25	6.9	3	1.2	15	6.0											8	3.2	55	18.4
Total Procurement				9.2		12.9		17.3		10.2												11.7		61.4	

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: C-9B / DC-9 AIRCRAFT MODIFICATION TITLE: UPGRADE STANDARDIZATION PROGRAM (OSIP 9-97)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: All hardware is COTS / NDI avionics that will be procured to prepare 29 Phase I kits and 26 Phase II kits for installation by / at the C-9 Depot maintenance contractor facilities.

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 10 Months

CONTRACT DATES: FY 1998: Dec-97 FY 1999: Dec-98 FY 2000: Dec-99

DELIVERY DATE: FY 1998: Oct-98 FY 1999: Oct-99 FY 2000: Oct-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (33) kits			4	1.1	25	6.9	3	1.2	1	0.4													33	9.6	
FY 1999 (14) kits									14	5.6													14	5.6	
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete (8) kits																						8	3.2	8	3.2
TOTAL			4	1.1	25	6.9	3	1.2	15	6.0												8	3.2	55	18.4

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	4	5	8	7	5		1		2	4	6	5													
Out		5	7	8	7	2			1	3	5	5	4												

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In									8	55
Out									8	55

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Flight Safety Upgrade (OSIP 12-98)

MODELS OF SYSTEMS AFFECTED: C-20 D/G TYPE MODIFICATION: Safety

DESCRIPTION/JUSTIFICATION: This modification provides C-20 D/G aircraft with Traffic Collision Alert System (TCAS) and the Enhanced Ground Proximity Warning System (EGPWS). TCAS provides Air traffic collision avoidance capabilities to C-20D/G aircraft. EGPWS provides ground proximity warning information. The TCAS 2000 and EGPWS (with wind shear detection) are SECNAV requirements. The Navy Program Office will utilize the original equipment manufacturer to identify suitable commercial equipment. TCAS 2000 will be installed in all seven C-20 D/G aircraft in the inventory. The wind shear detection system component of EGPWS will be installed in two C-20D aircraft. EGPWS will be installed in five C-20G aircraft.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: FAA approved Supplement Type Certifications (STC) has been approved and commercial off the shelf (COTS) equipment will be purchased with subsequent installation to begin within 90 days.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Installation Kit					2	1.1	10	1.2	2	0.4													14	2.6	
Installation Kits N/R						0.8		0.9																	1.7
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data						0.5		0.1		0.1															0.7
Training Equipment																									
Support Equipment																									
ILS						0.1		0.1																	0.3
Other Support						0.2																			0.2
Interim Contractor Support																									
Installation Cost					2	0.1	10	0.4	2	0.1														14	0.7
Total Procurement						2.7		2.7		0.6															6.1

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: C-20D/G

MODIFICATION TITLE: Flight Safety Upgrade (OSIP 12-98)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Kits to be installed by Maintenance contractor at Depot.

ADMINISTRATIVE LEADTIME: 1 Months

PRODUCTION LEADTIME: 1 Months

CONTRACT DATES: FY 1998: Oct-98

FY 1999: Oct-98

FY 2000: Oct-99

DELIVERY DATE: FY 1998: Nov-98

FY 1999: Nov-98

FY 2000: Nov-99

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (2) kits					2	0.1																		2	0.1
FY 1999 (10) kits							10	0.4																10	0.4
FY 2000 (2) kits									2	0.1														2	0.1
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL					2	0.1	10	0.4	2	0.1													14	0.7	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In					2	4	4	2		2															
Out					2	3	3	3	1	1	1														

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										14
Out										14

Exhibit P-3a Individual Modification

MODIFICATION TITLE: CT-39 GLOBAL POSITIONING SYSTEM (GPS) (OSIP 13-98)

MODELS OF SYSTEMS AFFECTED: CT-39 Aircraft TYPE MODIFICATION: Safety

DESCRIPTION/JUSTIFICATION: The Global Positioning System (GPS) is a space-based radio positioning system that will provide three-dimensional position, velocity and time information to suitably equipped users anywhere on or near the earth. Installation of the Allied Signal GNS XLS GPS in the CT-39G aircraft will allow continued operation of CT-39G aircraft in U.S. National Airspace (aircraft without an operational GPS will not be allowed in controlled U.S. Airspace). Installation of GPS is directed by Assistant Secretary of Defense Memorandum of 1 Dec 1994, Subj: Commercial Global Positioning System Receivers for T-44, TH-57, T-34, and T-39 aircraft. There are a total of 9 CT-39G aircraft in USN inventory; all 9 will receive GPS installation via an Engineering Change Proposal provided by Avtel, Inc. A GPS kit consists of a computer, antenna, wiring, and mounting hardware.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The GPS to be installed will be a commercially available, non-developmental item (NDI).

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
GPS Kit					4	0.3	4	0.3													1	0.1	9	0.8	
Installation Kits N/R						0.2																		0.2	
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data																									
Training Equipment																									
Support Equipment																									
ILS																									
Other Support																									
Interim Contractor Support																									
Installation Cost						1	*	7	0.2												1	0.1	9	0.3	
Total Procurement						0.6		0.6													0.2		1.3		

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. 3 Kits are prototype in FY 98 ; Do not require installation funds.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CT-39G Aircraft MODIFICATION TITLE: CT-39 GLOBAL POSITIONING SYSTEM (OSIP 13-98)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor installed kits

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 1 Months

CONTRACT DATES: FY 1998: Jan-98 FY 1999: Oct-98 FY 2000: N/A

DELIVERY DATE: FY 1998: Feb-98 FY 1999: Nov-98 FY 2000: N/A

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (4) kits					1	*	3	0.1																4	0.1
FY 1999 (4) kits							4	0.1																4	0.1
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete (1) kits																						1	0.1	1	0.1
TOTAL					1	*	7	0.2														1	0.1	9	0.3

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In					1	2	2	2	1																
Out						3	2	2	1																

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In									1	9
Out									1	9

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Flight Safety Upgrade (OSIP 14-98)

MODELS OF SYSTEMS AFFECTED: UC-12B/F/M, TC-12B, RC-12F/M TYPE MODIFICATION: Safety

DESCRIPTION/JUSTIFICATION: The crash of a U.S. Air Force CT-43 while flying a non-directional radio beacon (NDB) approach has resulted in a Department of Defense initiative to upgrade Flight Safety systems installations as soon as possible in all passenger carrying aircraft. This OSIP ensures compliance with this initiative on 87 C-12 model aircraft and identifies flight safety systems required to provide capability /upgrade to directed requirements. All C-12 aircraft require installation of Enhanced Ground Proximity Warning Systems (EGPWS), Windshear Detection Systems (WDS) and Traffic Collision Avoidance Sytems (TCAS II). The UC-12B aircraft require upgrades to provide a more reliable radar altimeters. Forty-six (46) UC-12B aircraft require color radar to support upgrade enhancements. Procurement of "A" and "B" kits must be 1:1 in order to meet operational and training requirements.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Systems are Commercial of the Shelf (COTS) and do not require development. System prototype is required in five aircraft.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Flight Safety Upgrade Kits					3	0.9	11	4.4	10	4.2	14	5.6	14	3.3	14	1.7	12	1.7	5	0.9	4	1.7	87	24.3	
Installation Kits N/R						1.0																		1.0	
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data						0.3																		0.3	
Training Equipment																									
Support Equipment																									
ILS																									
Other Support						0.2																		0.2	
Interim Contractor Support																									
Installation Cost							3	0.5	7	1.1	14	2.0	14	2.1	14	1.2	14	0.9	17	1.8	4	0.7	87	10.3	
Total Procurement						2.4		4.9		5.3		7.6		5.3		2.8		2.6		2.6		2.4		36.1	

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: UC-12B/F/M, TC-12B, RC-12F/M

MODIFICATION TITLE: Flight Safety Upgrade (OSIP 14-98)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Installed Kits

ADMINISTRATIVE LEADTIME: 1 Months

PRODUCTION LEADTIME: 8 Months

CONTRACT DATES: FY 1998: N/A

FY 1999: Oct-98

FY 2000: Nov-99

DELIVERY DATE: FY 1998: N/A

FY 1999: Jun-99

FY 2000: Jun-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1998 & PY (3) kits							3	0.5																3	0.5	
FY 1999 (11) kits									7	1.1		4	0.6												11	1.7
FY 2000 (10) kits											10	1.4													10	1.4
FY 2001 (14) kits													14	2.1											14	2.1
FY 2002 (14) kits															14	1.2									14	1.2
FY 2003 (14) kits																	14	0.9							14	0.9
FY 2004 (12) kits																				12	1.2				12	1.2
FY 2005 (5) kits																					5	0.5			5	0.5
To Complete (4) kits																							4	0.7	4	0.7
TOTAL							3	0.5	7	1.1	14	2.0	14	2.1	14	1.2	14	0.9	17	1.8	4	0.7	87	10.3		

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In						1	1	1	2	2	2	1	3	3	4	4	2	4	4	4	2	4	4	4	
Out						1	1	1	2	2	2	1	3	3	4	4	2	4	4	4	2	4	4	4	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	2	4	4	4	4	4	4	5	4	87
Out	2	4	4	4	4	4	4	5	4	87

Exhibit P-40, BUDGET ITEM JUSTIFICATION DATE: **February 1999**

APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications								P-1 ITEM NOMENCLATURE E-6A Series Modifications					
Program Element for Code B Items:								Other Related Program Elements					
	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
QTY		A											
COST (In Millions)	379.8	A	103.2	88.5	64.2	87.0	78.3	58.8	39.4	4.3			903.5

This line item funds modifications to E-6A TACAMO aircraft. The E-6A TACAMO is a manned airborne communications relay platform designed to provide a survivable communications link from the National Command Authority (NCA) to strategic forces. The Navy and Air Force have been directed to take actions necessary to incorporate Airborne Command Post (ABNCP) functions into the E-6A. The overall goal of the modifications budgeted in FY 2000 is to continue MILSTAR and HPTS mission avionics upgrades and consolidation of JCS strategic command and control tasking. OSIPs 24-92, Avionics Block Upgrade, and 32-93, Airborne Command Post, were combined in FY 1995 as the modifications had been fully integrated by the contractors. At the beginning of FY98 additional ABNCP requirements were included OSIP 32-93. The Multifunction Display System, OSIP 27-99, was approved as the solution to maintaining worldwide deployability due to changing Global Air Traffic Management/Global Air Navigation System standards. In FY 00 the Modified Miniature Receiver Terminal will be installed to enhance command and control of the strategic forces. The specific modifications budgeted and programmed are:

(TOA, \$ in Millions)

OSIP No.	Description	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
13-90	Corrections to Deficiencies	67.6	4.2										71.8
32-93	E-6B Mod	312.2	98.9	88.5	52.2	64.2	56.3	23.8					696.1
27-99	Multifunction Display System				12.0	21.0	19.0	29.0	39.4	4.3			124.7
15-00	E-6B Modified Mini Rcv Terminal					1.7	3.0	6.0					10.8
Total		379.8	103.2	88.5	64.2	87.0	78.3	58.8	39.4	4.3			903.5

Note: Totals may not add due to rounding.

MODIFICATION TITLE: E-6B Modifications (OSIP 32-93)

MODELS OF SYSTEMS AFFECTED: E-6A TYPE MODIFICATION: Public Law/Capability

DESCRIPTION/JUSTIFICATION: Mission Needs Statement: E-6A TACAMO/Airborne Command Post (ABNCP) Consolidation Program, MO-40-88-93, dated 22 Sep 93, substantiates the transfer of avionics equipment from the Air Force EC-135 ABNCP platform to the Navy E-6A TACAMO aircraft. This program consolidates JCS Strategic Command and Control tasking into one survivable airborne strategic platform and achieves significant operations and maintenance savings of minimally \$50M annually. The addition of the ABNCP mission to the TACAMO aircraft results in one platform having the ability to relay emergency action messages from the National Command Authorities to U. S. Strategic Forces and for CINCSTRAT to directly execute command and control of those forces. Operational Requirements Document (ORD) 389-88-95, Revised 20 Mar 97, supports modifications for the High Power Transmit Set, Original ABNCP avionics systems and MILSTAR capabilities. These are encompassed in ECP CTAS-100R3. ORD 389-88-95, revised 14 Aug 98, includes newly identified requirements including approved ECP RCS-100R1 for Voice Satellite (VOSAT) Communications and future ECPs for Cryptographic (CRYPTO) equipment upgrades, UHF DAMA/Installation Automated Data Processing Capability and Utility Trailing Wire Antenna removal. VOSAT capability is a voice recognition system that is required by CINCSTRAT for uncompromised communications, CRYPTO upgrade is required by CINCSTRAT to ensure ABNCP receipt and distribution of encrypted messages in accordance with relay timing parameters. UHF DAMA is required for communications across the spectrum of Command and Control responsibilities. ADP capability is required by CINCSTRAT for efficient operations by the embarked Battle Staff and for the capability to receive and generate encrypted and classified correspondence. The UTWA removal is required to offset the effects of other mods on zero gross fuel weight parameters. These modifications will be applied to all 16 E-6As in the active fleet inventory. This modification program is not applicable to any aircraft in either the National Guard or the Reserve.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Milestone III decision on ABNCP modifications granted January 1995. Milestone III decision for Avionics Upgrade and HPTS granted December 1995. FOT&E completed June 1998. Seven E-6B aircraft delivered to the fleet to date. Initial Operating Capability (IOC) date of 1 October 1998 was met. September message from CINCUSSTRATCOM delineated additional requirements and associated program cost growth resulted in program restructure with Full Operating Capability shifting from January 2001 to February 2003. IOC for VOSAT modification was 1 October 1998 and IOC for CRYPTO is 1 July 2000. ECPs will be processed for CRYPTO, UHF DAMA, ADP and UTWA modifications programs mature.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
RDT&E	1	107.3																					1	107.3		
PROCUREMENT																										
Installation Kits																										
HPTS Kit	9	11.8	4	4.5	3	3.4																	16	19.7		
ABNCP Kit	4	10.4	4	15.2	1	4.2	2	7.6	4	8.2	2	8.3												17	53.9	
VOSAT Kit					10	0.2	2	*	2	*	2	*												16	0.3	
CRYPTO Kit							6	2.6	8	3.5	2	0.9												16	6.9	
DAMA Kit									7	1.4	9	1.9												16	3.3	
UTWA Kit									7	0.1	9	0.1												16	0.2	
ADP Kit									7	0.7	9	0.9												16	1.6	
Installation Kits N/R		35.3				5.0		5.3		2.5		0.4													48.5	
Installation Equipment																										
HPTS/CFEA Equip	11	86.9	4	28.8	3	23.5																		18	139.3	
ABNCP Equip	4	6.8	4	13.4	1	1.8	2	3.4	2	3.4	2	3.3													15	32.1
VOSAT Equip					10	1.3	2	0.3	2	0.3	2	0.3													16	2.1
CRYPTO Equip							6	3.2	8	4.3	2	1.1													16	8.6
DAMA Equip									7	3.8	9	5.0													16	8.9
UTWA Equip									7	0.1	9	0.1													16	0.2
ADP Equip									7	3.0	9	3.9													16	6.9
MILSTAR Equip	7	38.1																							7	38.1
HPTS TIMING DIV Equip	19	5.8																							19	5.8
SDRS Equip			1	0.6																					1	0.6
Installation Equipment N/R		18.7								0.7		3.2														22.6
Engineering Change Orders																										
Data		16.6		4.5		0.8		2.0		2.8		0.6		0.5												27.8
Training Equipment	6	20.6		4.2	2	10.2	2	4.5	3	1.7	2	1.3													15	42.4
Support Equipment		4.3		1.4		0.5						1.7														7.9
ILS		8.0		3.1		2.2		3.1		1.5		0.2		0.3												18.3
Other Support		40.6		14.1		19.8		7.8		8.5		3.9		3.3												97.9
Interim Contractor Support		0.2		0.9																						1.1
Installation Cost	5	8.2	10	8.2	15	15.7	7	11.8	14	13.4	47	24.2	31	19.8											129	101.2
Total Procurement		312.2		98.9		88.5		52.2		64.2		56.3		23.8												696.1

Notes:

- Totals may not add due to rounding
- Asterisk indicates amount less than \$51K
- 1 ABCNP Prototype Kit procured in R&D.
- Installation quantities include HPTS and ABNCP kits separately to account for kit purchases although they were combined for installation purposes in 1996.
- ABNCP Installation Kits include 2 Lab Kit procurements in FY 00.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: E-6A MODIFICATION TITLE: E-6B Modifications

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Drive-in/Field Modification

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 15 Months

CONTRACT DATES: FY 1998: Nov-97 FY 1999: Nov-98 FY 2000: Nov-99

DELIVERY DATE: FY 1998: Feb-99 FY 1999: Feb-00 FY 2000: Feb-01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (36) kits	2	6.2	8	6.1	14	15.5	6	11.6	2	5.8	2	5.9	2	5.9										36	57.0
FY 1999 (10) kits									10	7.2														10	7.2
FY 2000 (33) kits											33	14.4												33	14.4
FY 2001 (33) kits											6	1.9	27	13.3										33	15.3
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	2	6.2	8	6.1	14	15.5	6	11.6	12	13.0	41	22.2	29	19.2										112	93.9

Note: Installations do not include 2 Lab Kits Procured in FY 00 and do not include trainer kits, but does include 1 kit bought in R&D in prior years.

Note: Monthly Phasing Schedules reflect only installations to Aircraft. They do not include Trainer installations.

HPTS Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	5		2	1			1		1		1		1		1		1		1		1		1		
Out	2	2		1	2	1			1		1		1		1		1		1		1		1		

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										16
Out										16

ABNCP Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	5		2	1			1		1		1		1		1		1		1		1		1		
Out	2	2		1	2	1			1		1		1		1		1		1		1		1		

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										16
Out										16

Exhibit P-3a

VOSAT Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In					8		1		1		1		1		1		1		1		1				
Out					6	1	1		1		1		1		1		1		1		1				1

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										16
Out										16

CRYPTO Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In										1	4	1		4	3		1		1		1				
Out										1	3	2		4	2		1		1		1				1

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										16
Out										16

DAMA Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In														1		4	4	4	2		1				
Out														1		4	4	4	1		1				1

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										16
Out										16

UTWA Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In														1		4	4	4	2		1				
Out														1		4	4	4	1		1				1

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										16
Out										16

Exhibit P-3A

ADP Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In																									
Out														1		4	4	4	2		1				1

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										16
Out										16

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Multifunction Display System (OSIP 27-99)

MODELS OF SYSTEMS AFFECTED: E-6B TYPE MODIFICATION: Capability

DESCRIPTION/JUSTIFICATION: Operational Requirements Document (ORD) 389-88-95, Revised 20 Mar 97, is under subsequent revision which includes the requirement for worldwide deployment capability. ORD 389-88-95, revised 14 Aug 98, requires installation of MDS. Current and future changes to Global Air Traffic Management/Global Air Navigation Systems required by FAA/ICAO are satisfied by the installation of the Multifunction Display System. Modifications to E-6 cockpit display system are required due to changes in the FAA/ICAO Required Vertical Separation Minimums and other airspace restrictions. Analog gauges are becoming antiquated and difficult to maintain and require replacement in order to meet these and upcoming navigational changes. Incorporation of MDS into the cockpit will replace over 100 dials and gauges with integrated display screens that are customizable for the E-6. This Multifunction Display System requires modification to a Commercial Off The Shelf item for an E-6 configuration and because it is similar to commercial industry, any further modifications will be less costly. Upgrades to installed systems and changes to Mission Computer Systems can then be accomplished by changing software without changing the hardware.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Multifunction Display System is planned for a Milestone III Decision in February 1999. Contract award anticipated to be February 1999 with NRE for systems integration of COTS hardware/software. Production/Installation of first COTS article July 00 with subsequent deliveries/installations through May 04. Initial Operating Capability scheduled for July 03.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
MDS Kit									1	3.2	2	2.2	7	5.8	6	5.7								16	16.9
Installation Kits N/R								7.6		0.2		5.8													13.6
Installation Equipment																									
MDS Equip									1	4.1	2	4.0	7	10.9	6	10.5								16	29.5
Installation Equipment N/R								1.5																	1.5
Engineering Change Orders																									
Data								1.6		1.0															2.6
Training Equipment									1	3.7					2	5.6								3	9.3
Support Equipment																									
ILS										1.2															1.2
Other Support								1.3		1.5		1.4		1.5		1.5		0.2							7.4
Interim Contractor Support																									
Installation Cost									2	6.1	2	5.6	3	10.8	8	16.1	4	4.2						19	42.8
Total Procurement								12.0		21.0		19.0		29.0		39.4		4.3							124.7

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: E-6B

MODIFICATION TITLE: Multifunction Display System (OSIP 27-99)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Drive In Modification

ADMINISTRATIVE LEADTIME: 1 Months

PRODUCTION LEADTIME: 3 Months

CONTRACT DATES: FY 1998: N/A

FY 1999: N/A

FY 2000: Nov-99

DELIVERY DATE: FY 1998: N/A

FY 1999: N/A

FY 2000: Feb-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 () kits																									
FY 2000 (1) kits									1	5.3													1	5.3	
FY 2001 (2) kits											2	5.6											2	5.6	
FY 2002 (7) kits													3	10.8	4	8.6							7	19.4	
FY 2003 (6) kits															3	6.5	3	3.4						6	9.9
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL									1	5.3	2	5.6	3	10.8	7	15.1	3	3.4					16	40.2	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In												1			2			1	2			2	2	1	2
Out															2	1		1	1	1		1	2	1	2

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	1	2								16
Out	2	1	1							16

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: Modified Miniature Receive Terminal (OSIP 15-00)

MODELS OF SYSTEMS AFFECTED: E-6B TYPE MODIFICATION: Obsolescence

DESCRIPTION/JUSTIFICATION: The Air Force E-4B and the Navy E-6B comprise the World Wide Military Command and Control System (WWMCCS) Airborne Resources (WABNRES). They operate within the Nuclear Command and Control System (NCSS) serving principally as a survivable command and control communications link between the National Command Authorities (NCA) and U.S. strategic forces. The WABNRES assets have a requirement to receive very low frequency/low frequency (VLF/LF) Emergency Action Messages (EAMs) and to communicate with one another in a nuclear jamming stressed environment. The OSD Strategic C3 Review of 3 September 1991 outlined a new strategic airborne command and control architecture. Key to this revised architecture is a modernization of the E-4B/E-6B VLF/LF capability to include the implementation of the High Data Rate (HIDAR) mode. As stated in the Joint Mission Need Statement for Very Low Frequency/Low Frequency (VLF/LF) receive capability for Strategic Command, Control, and Communications, CAF 330-92, the current VLF/LF receivers (R-2141) on the E-6B are outdated and the R-616A cannot be modified to incorporate the HIDAR mode. The Modified Miniature Receive Terminal (MMRT) provides the E-6B with reliable VLF/LF receive capability that will insure interoperability and connectivity with the forces in support of the new C3 architecture.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Joint program with Air Force as lead service. Preliminary Design Review completed. Critical Design Review completed March 1998. Prototype installation scheduled for January 1999 with anticipated completion in March 1999. Contractor Test/Developmental Test scheduled to begin in April 1999. Initial Operational Test and Evaluation scheduled to begin August 1999. Milestone III decision anticipated March 2000. Production and Installation scheduled March 2000 through September 2002.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E							1																	1	
PROCUREMENT																									
Installation Kits																									
MMRT Kit									8	0.9	8	0.8												16	1.7
Installation Kits N/R																									
Installation Equipment																									
MMRT Equip									8	0.1	8	0.1												16	0.3
Installation Equipment N/R																									
Engineering Change Orders																									
Data										0.1		0.1		0.1											0.3
Training Equipment									2	0.2	2	0.2		0.1										4	0.4
Support Equipment																									
ILS										0.1		0.1													0.2
Other Support										0.2		0.2		0.2											0.5
Interim Contractor Support										0.1		0.1													0.2
Installation Cost											3	1.5	15	5.7										18	7.1
Total Procurement										1.7		3.0		6.0											10.8

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. 1 Kit procured and installed under Air Force R&D Program.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: E-6A

MODIFICATION TITLE: Modified Miniature Receive Terminal (OSIP 15-00)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Modification

ADMINISTRATIVE LEADTIME: 2 Months

PRODUCTION LEADTIME: 16 Months

CONTRACT DATES: FY 1998: N/A

FY 1999: N/A

FY 2000: Dec-99

DELIVERY DATE: FY 1998: N/A

FY 1999: N/A

FY 2000: Apr-01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 (1) kits							1																		1
FY 2000 (7) kits											1	0.4	6	2.2										7	2.7
FY 2001 (8) kits													8	2.9										8	2.9
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL							1				1	0.4	14	5.2										16	5.6

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In							1									1	3	3	5	3					
Out							1									3	4	4	4						

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										16
Out										16

Exhibit P-40, BUDGET ITEM JUSTIFICATION										DATE: February 1999																																																																																																																			
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications								P-1 ITEM NOMENCLATURE Executive Helicopter Modifications																																																																																																																					
Program Element for Code B Items:								Other Related Program Elements																																																																																																																					
	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total																																																																																																																
QTY		A																																																																																																																											
COST (In Millions)	188.0	A	20.5	20.2	26.7	12.8	7.0	8.8	4.1	11.2	10.7	24.2	334.1																																																																																																																
<p>This line item funds modifications to the (11) VH-3D and (8) VH-60N Executive Helicopters. These aircraft are assigned to Marine Helicopter Squadron One to support the President of the United States. The VH-3D Service Life Extension Program (SLEP) consists of airframe, mechanical, and electrical upgrades which will increase the service life from 7,500 to 14,000 hours and thereby extend the executive mission life from the year 1998 past the year 2010. The VH-60N mid-life upgrade will provide improved mission performance. The Communications/Navigation/Survivability modification to both the VH-3D and VH-60N consists of a communications system upgrade to provide communications commonality between Executive Helicopters, Air Force One, and N-Cap; a Miniaturized Airborne GPS Receiver (MAGR); and a tailored electronic warfare (EW) suite. The overall goal of modifications budgeted in FY 2000 is to continue procurement efforts in accordance with the planned procurement strategy implemented during FY 1993.</p> <p>The specific modifications budgeted and programmed are:</p> <p style="text-align: center;">(TOA, \$ in Millions)</p> <table border="1"> <thead> <tr> <th>OSIP No.</th> <th>Description</th> <th>Prior Years</th> <th>FY 1997</th> <th>FY 1998</th> <th>FY 1999</th> <th>FY 2000</th> <th>FY 2001</th> <th>FY 2002</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> <th>To Complete</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>07-89</td> <td>VH-60N Navstar GPS</td> <td>6.0</td> <td>0.3</td> <td>0.2</td> <td>0.2</td> <td>0.1</td> <td>0.1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>6.8</td> </tr> <tr> <td>25-90</td> <td>VH-3D Safety, Reliability and Service Life Extension Program (SLEP)</td> <td>100.7</td> <td>5.0</td> <td>5.6</td> <td>3.1</td> <td>3.3</td> <td>0.3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>117.9</td> </tr> <tr> <td>27-92</td> <td>VH-3D Navstar GPS</td> <td>2.9</td> <td>0.3</td> <td>0.3</td> <td>0.1</td> <td>0.1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>3.7</td> </tr> <tr> <td>22-93</td> <td>Executive Helicopter Survivability Program</td> <td>52.3</td> <td>10.5</td> <td>10.8</td> <td>21.2</td> <td>8.3</td> <td>5.9</td> <td>5.7</td> <td>0.4</td> <td></td> <td></td> <td></td> <td>115.1</td> </tr> <tr> <td>23-93</td> <td>VH-60N Mid-Life Upgrade</td> <td>26.0</td> <td>4.3</td> <td>3.3</td> <td>2.1</td> <td>1.0</td> <td>0.8</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>37.6</td> </tr> <tr> <td>-02</td> <td>VH-60N Cockpit Upgrade</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>3.1</td> <td>3.7</td> <td>11.2</td> <td>10.7</td> <td>24.2</td> <td>52.9</td> </tr> <tr> <td>Total</td> <td></td> <td>188.0</td> <td>20.5</td> <td>20.2</td> <td>26.7</td> <td>12.8</td> <td>7.0</td> <td>8.8</td> <td>4.1</td> <td>11.2</td> <td>10.7</td> <td>24.2</td> <td>334.1</td> </tr> </tbody> </table> <p>Note: Totals may not add due to rounding.</p>														OSIP No.	Description	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total	07-89	VH-60N Navstar GPS	6.0	0.3	0.2	0.2	0.1	0.1						6.8	25-90	VH-3D Safety, Reliability and Service Life Extension Program (SLEP)	100.7	5.0	5.6	3.1	3.3	0.3						117.9	27-92	VH-3D Navstar GPS	2.9	0.3	0.3	0.1	0.1							3.7	22-93	Executive Helicopter Survivability Program	52.3	10.5	10.8	21.2	8.3	5.9	5.7	0.4				115.1	23-93	VH-60N Mid-Life Upgrade	26.0	4.3	3.3	2.1	1.0	0.8						37.6	-02	VH-60N Cockpit Upgrade							3.1	3.7	11.2	10.7	24.2	52.9	Total		188.0	20.5	20.2	26.7	12.8	7.0	8.8	4.1	11.2	10.7	24.2	334.1
OSIP No.	Description	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total																																																																																																																
07-89	VH-60N Navstar GPS	6.0	0.3	0.2	0.2	0.1	0.1						6.8																																																																																																																
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MODELS OF SYSTEMS AFFECTED:	<u>VH-60N</u> TYPE MODIFICATION: <u>SAFETY</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
<p>DESCRIPTION/JUSTIFICATION: The NAVSTAR GPS is a space-based radio positioning and navigation system that will provide three dimensional position, velocity and time information to suitably equipped users anywhere on or near the earth. The GPS system will interface with communication, navigation and weapon systems equipment such as Automatic Heading Reference System (AHRS), Inertial Navigation System (INS), on board computers, etc., on selected applications. Congress has mandated installation of GPS in all military aircraft by the year 2000. Space and Naval Warfare Systems Command is the primary development agency for GPS and has agreed to fund research and development costs to design, prototype, install and test the integrated system on the first of each aircraft type. IIIA receiver install kits were procured in FY 1990 and were installed under ECP 3600R2. One Miniaturized Airborne GPS Receiver (MAGR) was provided June 1994. Seven MAGRs will be provided FY 1996 through FY 1998 and will be installed under ECP 3407. MAGR is required for the VH-60N to conserve weight increases and provide space for future White House directed requirements.</p> <p>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The VH-60N fleet achieved Full GPS Operating Capability in August 1997. First MAGR deliveries were in FY 1994. Prototype GPS MAGR installations began in May 1995 and completed in June 1997. The MAGR installation is scheduled to complete DT/OT testing in November 1998 with Initial Operating Capability in May 1999.</p> <p>NOTE: Procured 2 III A Receivers that will not be installed.</p>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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<td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>PROCUREMENT</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Installation Kits</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>3A RECEIVERS</td> <td>9</td><td>0.2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>9</td><td>0.2</td> </tr> <tr> <td>MAGR</td> <td>3</td><td>0.1</td><td>3</td><td>0.3</td><td>2</td><td>0.1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>8</td><td>0.5</td> </tr> <tr> <td>Installation Kits N/R</td> <td></td><td>2.0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>2.0</td> </tr> <tr> <td>Installation Equipment</td> 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<td></td><td>0.1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>0.1</td> </tr> <tr> <td>Other Support</td> <td></td><td>2.2</td><td></td><td>*</td><td>0.1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>2.3</td> </tr> <tr> <td>Interim Contractor Support</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Installation Cost</td> <td>10</td><td>0.6</td><td></td><td></td><td></td><td></td><td>3</td><td>0.2</td><td>1</td><td>0.1</td><td>1</td><td>0.1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>15</td><td>0.9</td> </tr> <tr> <td>Total Procurement</td> <td></td><td>6.0</td><td></td><td>0.3</td><td></td><td>0.2</td><td></td><td>0.2</td><td></td><td>0.1</td><td></td><td>0.1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>6.8</td> </tr> </tbody> </table>		Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	RDT&E																										PROCUREMENT																										Installation Kits																										3A RECEIVERS	9	0.2																						9	0.2	MAGR	3	0.1	3	0.3	2	0.1																		8	0.5	Installation Kits 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Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: VH-60N

MODIFICATION TITLE: VH-60N NAVSTAR GPS

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation of MAGR GPS by SPAR (turn-key in FY 1996 and prior fiscal years only).

ADMINISTRATIVE LEADTIME: 8 Months

PRODUCTION LEADTIME: 16 Months

CONTRACT DATES: FY 1998: May-98 FY 1999: _____

FY 2000: _____

DELIVERY DATE: FY 1998: Sep-99 FY 1999: _____

FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 (15) kits	10	0.6					3	0.2	1	0.1	1	0.1												15	0.9
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	10	0.6					3	0.2	1	0.1	1	0.1												15	0.9

Installation Schedule - VH-60N MAGR

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	3							2	1			1		1											
Out	3											2	1		1			1							

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										8
Out										8

Installation Schedule - 3A RECEIVER

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	7																								
Out	5	2																							

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										7
Out										7

Exhibit P-3a	Individual Modification	
MODIFICATION TITLE:	<u>VH-3D SAFETY, RELIABILITY AND SERVICE LIFE EXTENSION PROGRAM (SLEP) (OSIP 25-90)</u>	
MODELS OF SYSTEMS AFFECTED:	<u>VH-3D</u>	TYPE MODIFICATION: <u>SAFETY</u>
<p>DESCRIPTION/JUSTIFICATION: The VH-3D is assigned to Marine Helicopter Squadron One to support the President of the United States. The VH-3D was delivered in 1975. The original airframe life, based on the SH-3 and White House half life requirements, was 5000 hours. An analytic study using SH-3 and VH-3D usage data increased that life to 8500 hours. At the current usage (30-35 hrs/month), the VH-3D will reach its Executive mission life in FY 1997-1999. With the cancellation or delay of the MV-22 there is no apparent replacement for the VH-3D. A Service Life Extension Program (SLEP) (for 11 aircraft) is necessary to increase VH-3D service life from 8,500 hours to 14,000 hours, extend Executive mission life to the year 2017, and qualify the VH-3D (11 aircraft) at a higher maximum gross weight (max. G. W.) using off the shelf components. Growth in the empty weight of the VH-3D, since initial procurement, has reduced the number of passengers and quantity of fuel carried on White House missions and decreased the safety margin. Increasing the amount of usable engine power will provide a greater margin of safety. Newer components will be more reliable. Mission communications will become more reliable with the addition of a Communication Systems Upgrade (CSU) as directed by the White House.</p> <p>Modifications include:</p> <p>Completed ECP's under this OSIP including strakes (part of ECP 5976), ALQ-144 (ECP 5966), IBIS and Overtorque Warning System (ECP 5962) and reliability kits to improve mission availability, reduce maintenance manhours, and cut life-cycle costs. Ongoing ECP's include:</p> <p>(1) SLEP nonrecurring design engineering to integrate airframe and component replacement due to fatigue or obsolescence was initiated in FY 1990 to support a FY 1993 prototype kit/installation and validation buy, with production kit procurement in FY 1995, FY 1996, FY 1997 and FY 1998. SLEP kits are identified by Phase kits (I, and II). Phase I is the core kit and comprises all required component and structural changes to extend the VH-3D service life. Portions of the Phase I kit will be installed on the VH-3D SLEP/CNSU Prototype. The remainder will be installed during an FY 1999 update. Phase II incorporates cockpit sliding windows and will be installed at the O-Level.</p> <p>(2) Communication System Upgrade (CSU) will ensure communications commonality between Air Force One, the National Emergency Airborne Command Post (NEACP), White House Communications Agency (WHCA), and Marine One. This commonality, as directed by the White House, will guarantee communication links under any requirement and will comply with the National Security Directive for Executive Fleet Airborne Architecture. Systems include: 14 station ICS, HF radio with ALE and ANDVT, a fourth Executive FM radio, a full duplex SATCOM (MUST Radio), and an upgraded systems computer. To guarantee avionics commonality between AF-1, NEACP, and Marine One, it is imperative all CSU avionics were procured in FY 1994. All proposed CSU avionics are NDI from various on going programs. Due to this program's small order quantities, future production or modification cannot be assured. All Executive FM radios were procured in FY 1992 to ensure commonality and facilitate economic ordering quantities. One prototype kit was procured in FY 1994 with the remaining production kits procurements in FY 1995 through FY 1998.</p> <p>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Nonrecurring engineering (NRE) for SLEP started in FY 1990. Naval Air Warfare Center, Aircraft Division (NAWCAD), Warminster began developing CSU avionics and software integration in FY 1991 utilizing the VH-60 avionics as a baseline and NVH-3A as an integration platform. NAWCAD will modify off the shelf components for incorporation into the CSU kits. Sikorsky Aircraft developed the interior modifications as part of the nonrecurring engineering of SLEP. Prototype SLEP installation began in Oct. 1994 and completed in July 1997. Development and Operational Testing will be completed in November 1998. Initial Operating Capability (2 aircraft) is planned in December 1998. Full Operating Capability is planned by June 2001.</p>		

FINANCIAL PLAN: (TOA, \$ in Millions)																								
	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E																								
PROCUREMENT																								
Installation Kits																								
Reliability Kit	11	0.8																					11	0.8
ALQ-144 Kit	8	0.2																					8	0.2
SLEP Kit	18	6.3	2	1.7	2	1.6																	22	9.6
Comm System Upgrade Kit	8	6.6	2	2.4	2	1.9																	12	10.9
IBIS Kit	11	0.3																					11	0.3
Installation Kits N/R		37.6																						37.6
Installation Equipment																								
IBIS	11	0.5																					11	0.5
FM Executive Radio	17	0.8																					17	0.8
Mil Aide/Fill Panels		0.6																						0.6
APN-194		0.1																						0.1
IRU's		0.1																						0.1
Strake Equipment		*																						*
RF Switches		0.2																						0.2
Comm System Upgrade	12	6.0																					12	6.0
Installation Equipment N/R		7.5																						7.5
Engineering Change Orders																								
Data		1.7																						1.7
Training Equipment		0.1																						0.1
Support Equipment		0.9																						0.9
ILS		0.3																						0.3
Other Support		20.6		0.8		2.1		0.4		0.4		0.3												24.6
Interim Contractor Support																								
Installation Cost	45	9.5					4	2.7	4	2.8													53	15.0
Total Procurement		100.7		5.0		5.6		3.1		3.3		0.3											117.9	

Notes:
 1. Totals may not add due to rounding
 2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: VH-3D

MODIFICATION TITLE: VH-3D Safety, Reliability, and SLEP

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation of IBIS, SLEP Phase I kits, Communications System Upgrade, and Strake will be at SPAR. Installation of ALQ-144 Phase Lock kit will be by Drive-in-Mod. (All turn-key in FY 1996 and prior fiscal years.)

ADMINISTRATIVE LEADTIME: 5 Months PRODUCTION LEADTIME: 20 Months

CONTRACT DATES: FY 1998: Jun-98 FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: Oct-99 FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (53) kits	45	9.5					4	2.7	4	2.8														53	15.0
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	45	9.5					4	2.7	4	2.8														53	15.0

Note: 11 Reliability kits installed at "O" level; no cost to APN-5.

Installation Schedule - Comm System Upgrade

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	8							2		1	1														
Out	8							8				2		1	1										

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										12
Out										12

Installation Schedule - SLEP

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	8							2		1	1														
Out	8							8				2		1	1										

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										12
Out										12

Exhibit P-3a Individual Modification

MODIFICATION TITLE: VH-3D NAVSTAR GPS (OSIP 27-92)

MODELS OF SYSTEMS AFFECTED: VH-3D TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: The NAVSTAR GPS is a space-based radio positioning and navigation system that will provide three dimensional position, velocity and time information to suitably equipped users anywhere on or near the earth. The GPS system will interface with communication, navigation and weapon systems equipments such as Automatic Heading Reference System (AHRS), Inertial Navigation System (INS), on board computers, etc., on selected applications. Congress has mandated installation of GPS in all military aircraft by the year 2000. The Space and Naval Warfare Systems Command is the primary development agency for GPS and has agreed to fund research and development costs to design, prototype, install and test the integrated system on the first of each aircraft type. One Miniaturized Airborne GPS Receiver (MAGR) kit was procured in FY 1994 and 10 MAGR kits were procured in FY 1995 through FY 1998 for incorporation in FY 1996 through FY 2000. MAGR is required for the VH-3D to minimize the increase in weight and conserve space for future White House directed requirements.

NOTE: FY-95 buy includes 4 accelerated GPS as interim fix until MAGR kits are installed as part of CNSU. MAGR Prototype kit procured under SPAWAR RDT&E funds.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The first MAGR deliveries were in FY 1994. Prototype MAGR installation began in October 1994 and completed in July 1997 (part of ECP 5976). Development and Operational Testing will be completed in November 1998. Initial Operating Capability is planned in December 1998 (2 aircraft) with Full Operating Capability scheduled in June 2001.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E	1																							1	
PROCUREMENT																									
Installation Kits																									
Accelerated GPS Kit	4	0.4																						4	0.4
MAGR Kit	6	0.5	2	0.3	2	0.2																		10	1.0
Installation Kits N/R		0.1																							0.1
Installation Equipment																									
Installation Equipment N/R		0.2																							0.2
Engineering Change Orders																									
Data		*																							*
Training Equipment		*																							*
Support Equipment																									
ILS		*																							*
Other Support		1.2		*		0.1																			1.4
Interim Contractor Support																									
Installation Cost	10	0.4					3	0.1	2	0.1														15	0.7
Total Procurement		2.9		0.3		0.3		0.1		0.1															3.7

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: VH-3D MODIFICATION TITLE: VH-3D NAVSTAR GPS

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor during SDLM (turn-key in FY 1996 and prior fiscal years).

ADMINISTRATIVE LEADTIME: 8 Months PRODUCTION LEADTIME: 20 Months

CONTRACT DATES: FY 1998: Jun-98 FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: Feb-99 FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (15) kits	10	0.4					3	0.1	2	0.1														15	0.7
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	10	0.4					3	0.1	2	0.1														15	0.7

Note: MAGR Prototype kit procured under SPAWAR RDT&E funds.

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	10					1		2		1	1														
Out	10									1		2		1	1										

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										15
Out										15

Exhibit P-3a	Individual Modification	
MODIFICATION TITLE:	<u>EXECUTIVE HELICOPTER SURVIVABILITY PROGRAM (OSIP 22-93)</u>	
MODELS OF SYSTEMS AFFECTED:	<u>VH-3D/VH-60N</u>	TYPE MODIFICATION: <u>SAFETY</u>
<p>DESCRIPTION/JUSTIFICATION: The VH-3D and VH-60N Executive Helicopters provide worldwide emergency evacuation and executive transport missions for the President of the United States. Missions include operations in areas subject to terrorist infiltrations, light anti-aircraft weapons, small arms, infrared seeking missiles, laser weapons, and other external threats. The proposed survivability improvements will provide mission aircraft with a tailored Electronic Warfare (EW) suite, including a full range of active and passive electronic countermeasures equipment. Certain systems in the suite can be mission configurable depending upon the threat. Other external threats include operations in air corridors with increasing air traffic. International and federal laws governing commercial air traffic require collision avoidance systems for certain aircraft which carry passengers. FAA requirements call for installation of a collision avoidance warning system no later than 1996 for most commercial aircraft. The collision warning system will give "Marine One" pilots a real time indication of proximity threat traffic. The system will augment radar tracking and provide traffic advisories when operating in areas with no radar coverage.</p> <p>Modification will include:</p> <p>(1) 19 ALQ-144A Phase Lock airframe change kits (11 VH-3D and 8 VH-60N) in FY 1994. The ALQ-144A Phase Lock is an active, continuously operating, electrically fired infrared (IR) jammer system designed to confuse or decoy three missile systems. A prototype was evaluated in FY 1991 on the VH-60N and in FY 1992 on the VH-3D.</p> <p>(2) 19 Survivability change kits and GFE (11 VH-3D and 8 VH-60N) in FY 1993 through FY 1998. One prototype kit was procured in FY 1993 for the VH-3D and one in FY 1994 for the VH-60N. 10 production kits were procured for the VH-3D in FY 1995 through FY 1998, and 7 VH-60N production kits were procured in FY 1996 through FY 1998. The Survivability kit consists of the APR-39 Radar Detector, the AAR-47 Missile Detector, the AVR-2 & AVR-2(A) Laser Detectors (providing real time laser illumination detection) and the ALE-47 Countermeasures Dispensing system. The ALE-47 will be utilized as a mission kit and will provide automatic active decoy for identified threats. Survivability Kits will provide pilots real time threat and relative position indications. Initial Radar Detector installations will use "on-loan" APR-39A(V)1 systems. Contract awarded for APR-39A(V)2 systems in FY 1998. Survivability Kits will be installed on the NVH-3A Testbed prior to install on the VH-3D and VH-60N prototypes to reduce risk and decrease time required for testing on the prototypes. Installation of these systems are being performed as part of ECP 5976 (VH-3D) and ECP 3407 (VH-60N).</p> <p>(3) Traffic Alert and Collision Avoidance System (TCAS) install kits and IFF (8 VH-60N), included as part of the MUG/CNSU kits in FY 1996 through FY 2002. VH-60N TCAS production kits were procured as part of the MUG/CNSU kits in FY 1996 through FY 1998 and will be installed as part of ECP 3407. TCAS/IFF kits for the VH-3D will be procured in FY 1998 through FY 2000 and installed under ECP 5981 in FY 1999 through FY 2002. Mode "S" update will follow as technology matures. ORD OR-315-05-92 and OR-316-05-92 apply.</p> <p>(4) An interim Auto Ignition system was developed and installed on the VH-60N aircraft in FY 1994. Permanent systems will be installed coincident with the VH-60N survivability mod installations.</p> <p>(5) 2 Simulators in FY 99 (1 VH-60N & 1 VH-3D)</p> <p>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Integration efforts to the airframes will be performed by either Sikorsky Aircraft or the individual kit manufacturer. Software integration, which started in FY 1993, is being developed by NAWC AD. The VH-3D and VH-60N survivability prototype installation commenced in October 1994 and completed in July 1997. Development and Operational testing of the APR-39 Missile Detector, AAR-47 Radar Warning Receiver, ALE-47 chaff and flare dispenser and the AVR-2 & AVR-2(A) Laser Detectors installed in the VH aircraft will be completed in November 1998. Initial Operating Capability for these systems is planned in December 1998 and Full Operating Capability is scheduled in the first quarter FY 2002. The first installation of TCAS/IFF is scheduled in June 1998 for the VH-60N and April 2000 for the VH-3D.</p>		

FINANCIAL PLAN: (TOA, \$ in Millions)																								
	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E																								
PROCUREMENT																								
Installation Kits																								
VH-3D Survivability Kit	8	7.1	2	2.6	2	2.1																	12	11.9
VH-60N Survivability Kit	4	1.9	3	2.4	2	1.3																	9	5.5
VH3D TCAS Kit					3	0.4	4	0.6	5	0.8													12	1.8
APR-39 Kit					19	0.5																	19	0.5
VH-60N Auto Ignition Kit	8	1.1																					8	1.1
Installation Kits N/R		18.8				2.0																		20.8
Installation Equipment																								
ALQ-144	19	2.4																					19	2.4
MUST Radio	3	0.3																					3	0.3
ALE-47 MLVS		0.1																						0.1
ALE-47	10	0.7																					10	0.7
VH-3D TCAS					3	0.3	4	0.5	5	0.6													12	1.4
APX-100 Upgrade										1	*			10	0.3								11	0.3
Installation Equipment N/R		*																						*
Engineering Change Orders										0.3														0.3
VH-3D Survivability																								
VH-60N Survivability		*																						*
Data		1.8		1.9		0.7																		4.4
Training Equipment		0.5					2	14.9															2	15.4
Support Equipment		1.2																						1.2
ILS		1.0				*																		1.1
Other Support		7.2		3.6		3.4		2.1		2.0		1.4		1.0		0.1								20.8
Interim Contractor Support																								
Installation Cost	39	8.2					5	3.1	6	4.9	5	4.1	5	4.7									60	25.0
Total Procurement		52.3		10.5		10.8		21.2		8.3		5.9		5.7		0.4								115.1

Notes:

- Totals may not add due to rounding
- Asterisk indicates amount less than \$50K
- Installation Kits for the ALQ-144 were procured in FY 1990 for the VH-3D under OSIP 25-90. Installation Kits for the VH-60N delivered with the production aircraft.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: VH-3D/VH-60N MODIFICATION TITLE: EXECUTIVE HELICOPTER SURVIVABILITY PROGRAM

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: ALQ-144A Phase Lock kits will be installed as Contractor Drive-in-Mod. Survivability kits (AAR-47, APR-39A(V)2, AVR-2 and ALE-47) will be installed on VH-3D and VH-60N aircraft during SPAR. Collision avoidance warning systems are currently being evaluated and will be incorporated during SPAR. (All turn-key in FY 1996 and prior fiscal years.)

ADMINISTRATIVE LEADTIME: 9 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 1998: Jun-98 FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: Jun-99 FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (51) kits	39	8.2					5	3.1	6	4.9	1	0.5												51	16.7
FY 1999 (4) kits											4	3.6												4	3.6
FY 2000 (5) kits													5	4.7										5	4.7
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	39	8.2					5	3.1	6	4.9	5	4.1	5	4.7										60	25.0

Installation Schedule - VH-3D Survivability

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	8						2		1	1															
Out	8										2			1	1										

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										12
Out										12

Exhibit P-3a Individual Modification

MODIFICATION TITLE: VH--60N MID-LIFE UPGRADE (OSIP 23-93)

MODELS OF SYSTEMS AFFECTED: VH-60N TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: The VH-60N is assigned to Marine Helicopter Squadron One (HMX-1) to support the President of the United States. This planned upgrade will correct identified deficiencies in aircraft performance and mission capabilities. Upgrades are required in system areas pertaining to environmental issues, communication and navigation. White House operational requirements for the VH-60N designate specific communication and mission improvement requirements.

Modifications are performed under ECP 3407 and will include:

(1) Incorporation of a Communications System Upgrade. One prototype Communications System Upgrade kit was procured in FY 1994. Seven production communications system upgrade kits were procured in FY 1996 through FY 1998. The upgrade will provide communication system commonality between the VH-60N and VH-3D, Air Force One, National Emergency Airborne Command Post (NEACAP), and the White House Communications Agency (WHCA).

Specifically the CSU will include the following:

- (a) Addition of a fourth VHF/FM radio. This enhances system capability to one full duplex and two half duplex channels capable of secure and clear voice operation.
- (b) HF Radio system capable of half duplex secure and clear voice operation. Must have embedded Automatic Link Establishment (ALE) capability and operationally securable with Advance Narrow Band Digital Voice Terminal (ANDVT).
- (c) Full duplex SATCOM capability (25 Khz channel spacing (MUST Radio)).

(2) Incorporation of MUG kit. Eight production MUG kits were procured in FY 1996 through FY 1998. The MUG kit will consist of:

- (a) Aircraft modifications to improve aircraft performance and reliability. Airframe modifications are as follows:
 - (1) A rotor brake system capable of stopping the rotor head while both engines are operating.
 - (2) New APU components to improve reliability.
 - (3) Improved tail landing gear to absorb greater stress and impact landings due to stress from increase operating weight.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Non-recurring engineering (NRE) for the Mid-Life Upgrade began in 1993. Communications System Upgrade software integration, which started in FY 1992, is being developed by NAWC AD Warminster using the NVH-3A Testbed as an integration platform. The Naval Air Warfar Center Aircraft Division is modifying off-the-shelf components for incorporation into CSU kits. Sikorsky Aircraft is developing the interior and structural modifications as part of the NRE. The prototype aircraft for the Communications System Upgrade Kit was inducted in May 1995 and completed in June 1997. Development and Operational testing of the CSU software will be completed in July 1998. First production MUG VH-60N aircraft was inducted in June 1998. Initial Operational Capability is planned in September 1999 and Full Operational Capability is scheduled in December 2001.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Comm System Upgrade/MUG Kit	4	2.0	3	2.6	2	1.3																		9	5.9
Installation Kits N/R		8.7																							8.7
Installation Equipment																									
Comm System Upgrade	8	3.5																						8	3.5
FM Radios	10	0.5																						10	0.5
Installation Equipment N/R																									
Engineering Change Orders																									
Data		0.6																							0.6
Training Equipment		0.1						0.1																	0.2
Support Equipment		1.0																							1.0
ILS		0.7																							0.7
Other Support		7.4		1.8		2.0		0.5		0.5		0.3													12.5
Interim Contractor Support																									
Installation Cost	5	1.6					3	1.5	1	0.5	1	0.5												10	4.2
Total Procurement		26.0		4.3		3.3		2.1		1		0.8													37.6

- Notes: 1. Totals may not add due to rounding.
 2. Asterisk indicates amount less than \$50K.
 3. One kit funded as Prototype with FY-94 install kit non-recurring.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: VH-3D/VH-60N MODIFICATION TITLE: VH-60N MID-LIFE UPGRADE

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation of Communication System Upgrade and Mid-Life Upgrade kits will occur during SPAR (All-turn key in FY 1996 and prior fiscal years).

ADMINISTRATIVE LEADTIME: 8 Months PRODUCTION LEADTIME: 16 Months

CONTRACT DATES: FY 1998: May-98 FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: Sep-99 FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (10) kits	5	1.6					3	1.5	1	0.5	1	0.5												10	4.2
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL	5	1.6					3	1.5	1	0.5	1	0.5												10	4.2

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	5						2	1			1		1												
Out	5										2	1			1		1								

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										10
Out										10

CLASSIFICATION: UNCLASSIFIED

BUDGET ITEM JUSTIFICATION SHEET
P-40

DATE: February 1999

APPROPRIATION/BUDGET ACTIVITY

Aircraft Procurement, Navy/APN-5 Aircraft Modifications

P-1 ITEM NOMENCLATURE

Special Project Aircraft

Program Element for Code B Items:

Other Related Program Elements

	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
QUANTITY													
COST (In Millions)			13.4	22.8	20.3	28.8	4.2	8.3	5.1	5.4	5.6		113.8

This Defense Airborne Reconnaissance Office (DARO) program modifies or replaces obsolete intelligence collection equipment in FY 2000 in four P-3 special project aircraft. Procurements vary in each fiscal year and include common Navy systems for increased capability, reduced operator workload and common logistics. Active PAA inventory is 4. There are 4 aircraft in the Special Mission inventory. They have an average service life of 29.5 years and without replacement the first aircraft will reach end of service in 2001. The specific modifications budgeted and programmed are:

OSIP No.	Description	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
18-97	P-3 Special Project Aircraft		7.3	19.7	14.7	21.2	2.1	4.7	0.5	0.5	0.5		71.2
19-97	P-3 Intelligence Sensors/Systems		6.1	3.1	5.6	7.6	2.1	3.6	4.6	4.9	5.1		42.7
TOTAL			13.4	22.8	20.3	28.8	4.2	8.3	5.1	5.4	5.6		113.8

Note: Totals may not add due to rounding

CLASSIFICATION:

UNCLASSIFIED

Exhibit P-3a	INDIVIDUAL MODIFICATION																								
MODIFICATION TITLE: <u>P-3 Special Project Aircraft (OSIP 18-97)</u>																									
MODELS OF SYSTEM AFFECTED: <u>P-3B/C</u>	TYPE MODIFICATION: <u>Operational Improvement</u>																								
DESCRIPTION/JUSTIFICATION:																									
<p>This modification replaces obsolete intelligence collection equipment in four P-3 Special Project aircraft by:</p> <ol style="list-style-type: none"> 1. Replacement of two (2) P-3 Special Project aircraft that reach 100% FLE (fatigue life expenditure) in FY01. This effort includes upgrading two aircraft to the same configuration and operational capability as the current P-3 Special Project aircraft. The increased capability is classified. 2. Procurement of common Navy systems for increased capability, reduced operator workload and common logistics. 3. Update of radio frequency distribution hardware for selected sensors. 4. Conversion of interior and exterior of aircraft for future operations. 																									
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:																									
Approval for full production is not required.																									
FINANCIAL PLAN (TOA, \$ in Millions):																									
	Prior Years	FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
P-3 System A (Mission Unique)					4	.5																	4	.5	
P-3 System B (Mission Unique)					1	.1																	1	.1	
LESPA			4	.9																			4	.9	
Replacement Aircraft					4	3.5	8.3		7.4														4	19.3	
Installation Kits N/R						3.0																		3.0	
Installation Equipment				1.2		6.2			.4	.4		1.8												10.0	
Installation Equipment N/R				2.4		2.0			.6															5.0	
Engineering Change Orders																									
Data						1.7	.8		4.7			.3												7.5	
Training Equipment							.2																	.2	
Support Equipment																									
ILS				.4		.3			.2															.9	
Other Support				2.4		2.2		1.0	1.6	1.7		1.7												10.6	
Interim Contractor Support																									
Installation Cost							4	4.5	6.4			1	.9	1	.5	1	.5	1	.5				8	13.2	
TOTAL PROCUREMENT			4	7.3	9	19.7	14.7		21.2	2.1		4.7		.5		.5		.5				13	71.2		
Notes:																									
1. Totals do not add due to rounding																									
2. Asterisk indicates amount less than 51K																									

Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3B/C MODIFICATION TITLE: P-3 Special Project Aircraft (OSIP 18-97)
Replacement Aircraft / Block Mod

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Drive In.

ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 8 Months

CONTRACT DATES: FY 1998: 6/98 FY 1999: 6/99 FY 2000: 6/00

DELIVERY DATE: FY 1998: 2/99 FY 1999: 2/00 FY 2000: 2/01

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 1998 & PY (4) kits							4	4.5	*	6.4													4	10.8
FY 1999 () kits																								
FY 2000 () kits																								
FY 2001 () kits																								
FY 2002 () kits																								
FY 2003 () kits																								
FY 2004 () kits																								
FY 2005 () kits																								
To Complete () kits																								
TOTAL							4	4.5	*	6.4												4	10.8	

* Cross decking equipment for replacement aircraft.

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In																									
Out							2		2						1										

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										4
Out										4

Exhibit P-3a INDIVIDUAL MODIFICATION

MODIFICATION TITLE: P-3 Intelligence Sensors and Systems (OSIP 19-97)

MODELS OF SYSTEM AFFECTED: P-3B/C TYPE MODIFICATION: Operational Improvement

DESCRIPTION/JUSTIFICATION:

This modification replaces obsolete intelligence collection equipment in four P-3 Special Project aircraft by:

1. Installation and support of special mission equipment provided by Other Agencies.
2. Procurement of special mission equipment as directed by the Chief of Naval Operations.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Approval for full production is not required.

FINANCIAL PLAN (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits					4	.9	3	.2			4	1.0	4	.3									15	2.4	
Installation Kits N/R											1.0		.3											1.2	
Installation Equipment																									
Mission Unique Equipment				5.7		2.1		5.3		7.4			2.0		4.4		4.7		4.9					36.6	
Installation Equipment N/R				.2																				.2	
Engineering Change Orders																									
Data													.3											.3	
Training Equipment													.3											.3	
Support Equipment																									
ILS													.3											.3	
Other Support				.2			.2		.2		.2		.2		.2		.2		.2		.2			1.4	
Interim Contractor Support																									
Installation Cost																									
TOTAL PROCUREMENT				6.1	4	3.1	3	5.6		7.6	4	2.1	4	3.6		4.6		4.9		5.1			15	42.7	

Notes:

1. Totals do not add due to rounding * Installation of FY97-00 Mission Unique Equipment to be accomplished under OSIP 18-97.
2. Asterisk indicates amount less than 51K * Installation of FY01-05 Mission Unique Equipment to be accomplished at field (O) level.

Exhibit P-3a

CLASSIFICATION:

UNCLASSIFIED

Exhibit P-42, BUDGET ITEM JUSTIFICATION										DATE: February 1999			
APPROPRIATION/BUDGET ACTIVITY								P-1 ITEM NOMENCLATURE					
Aircraft Procurement, Navy/APN-5 Aircraft Modifications								T-45 Series Modifications					
Program Element for Code B Items:								Other Related Program Elements					
	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
QUANTITY													
COST (In Millions)	17.5	A	11.4	5.3	8.5	9.7	9.8	6.9	12.0	32.7	32.3	144.1	290.0
<p>This line item funds modifications to T-45A aircraft. The T-45A Goshawk is a tandem-seat, carrier capable derivative of the existing British Aerospace Hawk aircraft powered by a single Rolls Royce Adour engine. It serves as the aircraft component of the T45TS integrated jet pilot training system which replaces the three decade old TA-4 and T-2 technology. The overall goal of the modifications budgeted in FY 2000 is to correct discrepancies and deficiencies discovered after delivery of the aircraft and to commence major upgrades to the aircraft cockpit, navigation system, and aircrew ejection seats.</p> <p>The designed service life of the aircraft is 14,400 hours with the average remaining service life of inventory aircraft estimated at 12,480 hours.</p> <p>The specific modifications budgeted and programmed are:</p>													
(TOA, \$ in Millions)													
<u>OSIP No.</u>	<u>Description</u>	<u>Prior Years</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To Complete</u>	<u>Total</u>
08-95	T-45TS Correction to Deficiencies	13.7	11.4	5.3	5.7	7.0	7.1	6.9	12.0	6.0	6.2	30.2	111.3
16-96	T-45TS Digital Cockpit	3.8								25.6	24.9	106.9	161.2
04-99	T-45TS NACES P3I				2.8	2.7	2.7						8.2
-04	T-45TS GPS									1.1	1.2	7.0	9.3
TOTAL		17.5	11.4	5.3	8.5	9.7	9.8	6.9	12.0	32.7	32.3	144.1	290.0
<p>* Dollars less than 51K NOTE: Numbers do not add due to rounding</p>													

CLASSIFICATION:

UNCLASSIFIED

Exhibit P-3a

INDIVIDUAL MODIFICATION

MODIFICATION TITLE: T45TS Correction of Deficiencies (OSIP 8-95)

MODELS OF SYSTEM AFFECTED: T-45 Training System (T45TS)

TYPE MODIFICATION: Safety, Reliability, Increased Service Life, Improved Mission Capabilities

DESCRIPTION/JUSTIFICATION:

Ejection Seat Handle MB-9155

Modification will standardize ejection seat firing handle to enhance aircrew safety. Incorporation will lower the seat bucket firing handle assembly to eliminate interference with flight controls. Installation of this ECP is in response to a F-18 mishap report that documented a safety deficiency and proposed recommendations relating to incidents of inadvertent ejection.

Uncommanded Gear Extension: MDA-T45TS-TBD

Modification will increase travel of the landing gear control interconnect cable, increase cable friction, and change the gear selector valve actuation signal to only when the handle is in the full up or full down position. Installation of this ECP is in response to a T45TS Engineering Investigation that documented a deficiency and proposed recommendations relating to incidents of uncommanded landing gear extensions.

Ground Training Systems: MDA-T45TS-TBDs

Updates to the T-45 aircraft simulator to match evolving aircraft flight characteristics and software and academics enhancements to improve training capabilities. The following Ground Trainer Systems ECP's are included in the controls: Flap Actuation Systems Simulators, Touch and Go Engine Surges, current and future Simulator Upgrades.

Directional Control MDA-T45TS-TBD

Modifications will improve the T45 aircraft ground handling characteristics and landing flying qualities. Number one issue of the Operational Advisory Group (OAG).

Structural ECPs

Modifications will incorporate changes to improve structural details to increase aircraft service life beyond 14,400 flight hours, per initial design specifications, to a projected 21,000 flight hours. During FSD testing of the T45 aircraft it was determined that incorporation of redesigned components applicable to the critical load paths will significantly increase the service life of the aircraft. This structural correction OSIP effects several structural components to include: Wing Dolly, SS 02 Monitor Bracket, Horizontal Stabilizers, Frame 24 Crossbeams Lugs, Wing Leading Edge Redesign, Frame 29 Lower Flange, Uplock Beam Forward Attach, Slat Track Rib 5 Downstop Bolt, Frame 28/32 Boundary/Vert Fin, Inlet Close-Out Fuel, Airframe Engine Mount, Frame 21 Structure, MLG Bay Tilted & Fasteners, Longitudinal Systems Viscous, Frame 20 Structures, Frame 12 Vertical Splice, NLF Trunnion Beam, Slat Actuator Fitting Angle, Structure Life Improvement, Speed Brake Upgrade, Engine Mount Link Option, Stabilizer Back-Up Structures, Fuselage/Frame 10 Door, and Fin Bracket Lever Box Assembly.

Avionics

Software modifications to the T45TS will update the Display unit, heads Up Display, and Global Positioning System and Inertial Navigation Assembly to enhance effectiveness of pilot training. The Air Data Recorder improvements will increase available memory and allow monitoring of additional aircraft characteristics which will allow improved component tracking and increase service life. The following ECP's are part of the Avionics package of the aircraft and include Avionics Stress Life Tracking, Air Data Recorder Upgrade (current and future), Gina Updates, C/P-21 Software Updates, and GPS Upgrade

Engines

Modifications will increase engine service life and correct safety related issues. These modifications include High Pressure Fuel Pump, Front Combustion Liner, High Pressure Compressor Ladder Assembly, Low Pressure Nozzle Guide Vanes, High pressure Nozzle Guide Vanes and a modification to address engine surge/compressor stall. Modification will increase the overhaul interval from 1000 starts to 2000 starts. This also addresses a T45TS Engineering Investigation that documented a deficiencies with the combustor liner and oil galley. The Engine ECP's include the Dual Boost Pump, Low Pressure Nozzle Guide Vanes, High Pressure Nozzle Guide Vanes, HP Fuel Pump, Front Combustion Liners, Gas Turbine Starters, Engine Rising Idle, Engine Surges, and the Engine Ladder Assembly.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: N/A

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Ejection Seat Handle MB-9155					154	0.1																		154	0.1
Uncommanded Gear Extension							40	0.5	40	0.5	40	0.5												120	1.5
Ground Training Systems TBD's	24	1.4							8	0.1	8	0.1	8	0.1	8	0.1						8	0.9	64	2.7
Directional Control TBD									27	0.7	27	0.6	27	0.6	30	0.8	*	*				39	1.2	150	3.9
Structural ECP's	237	4.3	110	4.1	69	1.4	102	0.8	146	0.3	46	0.2	38	0.4	89	2.2			12	0.3	483	9.8	1,332	23.8	
Avionics	42	0.3	15	0.2			9	0.2	30	0.1	30	0.1	30	0.2	118	1.5	27	0.2	41	0.2	109	1.5	451	4.5	
Engines	113	1.5	315	3.2			100	0.1							30	0.8	30	0.3	4	0.1	206	8.1	798	14.0	
Installation Kits N/R		0.3		0.5		0.6		0.7		1.0		0.9		0.3		1.0		0.2		0.1					5.7
Installation Equipment																									0.0
Ejection Seat Handle MB-9155						0.2																			0.2
Uncommanded Gear Extension								*		*		*													0.1
Ground Training Systems TBD's		*								*		*		*		*									0.0
Directional Control TBD										*		*		*		*		*							0.0
Structural ECP's		0.1		0.1		0.1		*		0.2		*		0.1		0.1				*					0.7
Avionics		*		*			*		*		*		*		0.1		*		*		*				0.2
Engines		*		0.2			*		*		*		*		*		*		*		*				0.3
Installation Equipment N/R		0.1		0.1		0.1		0.1		0.1		0.1		0.1		0.1		0.1		0.1		0.1			0.9
Engineering Change Orders																									0.0
Data		0.1		0.2		0.1		0.1		0.2		0.2		0.1		0.1		0.1		0.1		0.1			1.3
Training Equipment		0.5		0.8		0.5		0.6		1.1		1.2		1.0		1.0		0.9		0.9		0.9			8.5
Support Equipment		0.1		0.1		0.1		0.1		0.1		0.1		0.1		0.1		0.1		0.1		0.1			0.9
ILS																									0.0
Other Support		0.1		*		0.2		0.1		*		*		*		*		*		*		*			0.5
Interim Contractor Support																									0.0
Installation Cost	233	4.9	374	1.9	344	1.9	251	2.4	254	2.6	154	3.1	106	3.8	287	4.0	87	4.1	83	4.2	780	8.7	2,953	41.6	
TOTAL PROCUREMENT		13.7		11.4		5.3		5.7		7.0		7.1		6.9		12.0		6.0		6.2		30.2		111.3	

- Notes:
1. Totals do not add due to rounding
 2. Asterick indicates amount less than 51K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: **T45TS** MODIFICATION TITLE: T-45TS Correction of Deficiencies (Osip 08-95)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: **"I" and "D" Level Installation: Contractor Field Modification Team-Separate Contract**

ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 1999: N/A FY 2000: N/A

DELIVERY DATE: FY 1999: N/A FY 2000: N/A

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1998 & PY (1079) kits	233	4.9	374	1.9	344	1.9																		951	8.6	
FY 1999 (251) kits							251	2.4																	251	2.4
FY 2000 (251) kits									254	2.6															254	2.6
FY 2001 (151) kits											154	3.1													154	3.1
FY 2002 (103) kits													106	3.8											106	3.8
FY 2003 (275) kits															287	4.0									287	4.0
FY 2004 (57) kits																	87	4.1							87	4.1
FY 2005 (57) kits																			83	4.2					83	4.2
To Complete (845) kits																					780	8.7			780	8.7
TOTAL	233	4.9	374	1.9	344	1.9	251	2.4	254	2.6	154	3.1	106	3.8	287	4.0	87	4.1	83	4.2	780	8.7	780	8.7	2,953	41.6

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	728	56	56	56	55	62	62	63	64	63	64	63	64	38	38	39	39	26	27	26	27	72	72	72	71
Out	542	86	86	86	86	66	66	66	66	64	65	65	65	39	39	39	40	37	37	38	39	47	48	48	48

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	22	22	22	21	21	21	21	20	780	2953
Out	39	40	39	40	26	27	27	27	780	2953

Exhibit P-3a

INDIVIDUAL MODIFICATION

MODIFICATION TITLE: T-45A NACES P3I (Navy Aircrew Common Ejection Seat Pre-Planned Product Improvement) (OSIP 4-99)

MODELS OF SYSTEM AFFECTED: T-45A NACES GFE EJECTION SEATS

TYPE MODIFICATION: PS SAFETY

DESCRIPTION/JUSTIFICATION:

An average of 15 Naval Aircrew fatalities occur each year from in-flight mishaps. Nearly half result from the seat ejecting crewmembers into the ground or water at low altitude and adverse attitudes. Because of their lighter throw weight, women are particularly susceptible to this and other ejection risks. The NACES P3I program is divided into three phases of development and upon completion of each phase, existing aircraft seats will be modified with NACES retrofit kits. A total of 119 aircraft will be retrofitted.

Phase I - Current technology improvements to increase cockpit accommodation and reduce injury risk for all aircrew.

Phase II - Propulsion stability control to reduce the risk of major injury to less than 5% up to 600 knots.

Phase III - Stability control and surface avoidance capability for low altitudes, adverse attitudes, and out of control ejections.

Procurement of Phase I kits have been priced and are represented by this OSIP. Procurement costs for Phase II and III have not been determined.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Contract awarded third quarter FY 1997 for development and testing. Approval of the retrofit kits is expected by second quarter FY 1999 following testing on the validation/verification kit installs which will be completed by February 1999.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits							75	1.8	85	2.0	78	1.9											238	5.7	
Installation Kit - Unit Price							*	*	*	*	*	*													
Installation Kits N/R								0.5		0.5														1.0	
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data								0.1																0.1	
Training Equipment							6	0.2															6	0.2	
Support Equipment																									
ILS																									
Other Support																									
Interim Contractor Support																									
Installation Cost								18	0.2	87	0.2	79	0.8	60	*									244	1.3
TOTAL PROCUREMENT								2.8		2.7		2.7		*										8.3	

* Dollars less than 51K

NOTE: Numbers do not add due to rounding

Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: T-45A NACES GFE EJECTION SEATS MODIFICATION TITLE: T-45A NACES P3I (OSIP 4-99)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Installations

ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 6 Months

CONTRACT DATES: FY 1999: Mar-99 FY 2000: Jan-00

DELIVERY DATE: FY 1999: Sep-99 FY 2000: Jul-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 (81) kits							18	0.2	63															81	0.2
FY 2000 (85) kits									24	0.2	61													85	0.2
FY 2001 (78) kits											18	0.8	60	*										78	0.9
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL							18	0.2	87	0.2	79	0.8	60	*										244	1.3

Installation Schedule

	FY 1998 & Prior	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				FY 2004			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In				18	20	23	24	20	20	20	19	20	20	20	20										
Out					18	20	23	24	20	20	20	19	20	20	20	20									

	FY 2005				To Complete	TOTAL
	1	2	3	4		
In						244
Out						244

Exhibit P-40, BUDGET ITEM JUSTIFICATION										DATE: February 1999			
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/AFN-5 Aircraft Modifications								P-1 ITEM NOMENCLATURE Power Plant Changes					
Program Element for Code B Items:								Other Related Program Elements					
	Prior	ID								To Years	Total		
QTY		A											
COST (In Millions)	192.7	A	15.1	17.3	15.2	15.6	15.7	16.0	16.0	16.3	16.7	19.6	356.2
<p>This line item funds modifications to all in-service aircraft engines. Power plant changes are required throughout the service life of each aircraft to correct flight safety deficiencies and improve operational readiness while reducing engine operating costs. This program finances the procurement and installation of retrofit kits for all Navy and Marine Corps aircraft engines and related propulsion hardware such as propellers, starters, and transmissions. The overall goal of the modifications budgeted in FY-2000 is to continue modification efforts previously initiated on the engines for the F/A-18, F-14, AV-8B, H-53, H-46, H-60, E/A6-B, A-6, A-4, H-3, C-2, E-2, H-2, AH-1, C-130, and P-3 aircraft. The following depicts the current funding levels budgeted and programed for power plant changes:</p>													
(TOA, \$ in Millions)													
OSIP No.	Description	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
N/A	Power Plant Changes	192.7	15.1	17.3	15.2	15.6	15.7	16.0	16.0	16.3	16.7	19.6	356.2
Total		192.7	15.1	17.3	15.2	15.6	15.7	16.0	16.0	16.3	16.7	19.6	356.2
<p>Note: Totals may not add due to rounding.</p>													

FY 1997 FY 1998

Exhibit P-3a		INDIVIDUAL MODIFICATION	
MODIFICATION TITLE:	Power Plant Changes (OSIP: N/A)		
MODELS OF SYSTEM AFFECTED:	All Active In-Service Navy and Marine Corps Aircraft	TYPE MODIFICATION:	Approx. 80% Safety, 20% Reliability
DESCRIPTION/JUSTIFICATION:			
<p>This program corrects aircraft flight safety deficiencies, improves operational fleet readiness and reduces engine cost of ownership by incorporating approved power plant changes. Power plant changes are required throughout the aircraft service life as the engine ages and operationally revealed deficiencies are discovered, researched, and solutions engineered. The Component Improvement Program (CIP) which is funded in RDT&E,N develops and demonstrates engineering solutions to these deficiencies and through the Engineering Change Proposal (ECP) process, initiates power plant changes. The power plant change program procures the necessary power plant change retrofit kit, its installation, and technical data. This program provides retrofit kits for all Navy and Marine aircraft engines and propulsion related hardware such as propellers, starters, generators, and transmissions. Reliability Improvements are designed to increase Mean Time Between Failure and Mean Time Between Engine Removal by 30% on average and are expected to generate savings/cost avoidance in excess of \$50M annually.</p>			
F110 Engine Program:...			
<p>ECP T113 - Turbine Frame Forward Fairing improvement and sheet metal redesign to improve the reliability and life of the Turbine Frame Assembly.</p> <p>ECP T109 - Turbine Frame Oil Tube Bracket and Damper/F-110-GE-400 introduces an anti-rotation bracket and damper to restrain and counteract the torque applied during assemble/disassembly.</p> <p>ECP T119 - Exhaust Nozzle Hinge Joint Corrosion Reduction/F110-GE-400 introduces an improved exhaust nozzle hinge design which will reduce corrosion and disassembly related problems.</p> <p>ECP T146 - F110-GE-400 Combustor Joint Wear Fix a change to the Combustion Chamber that provides the required clamp load at the Cowl/Liner/Dome interface to prevent slippage due to transverse load.</p> <p>ECP-T086 - F110-GE-400 Vented IDG Ejector Valve changes the assembly solenoid to vented solenoid to prevent the entrapment of moisture and contaminants within the solenoid assembly, which reduces the corrosion build-up.</p> <p>ECP T130 - Master Chip Detector Relocation moves the MCD to an area which is easily accessible through the daily inspection doors. The redesigned MCD has an improved capture efficiency, and is less prone to leakage</p> <p>ECP T135 - W6 Cable Chafing/F110-GE-400 introduces a new bracket that is assembled onto the engine using two existing bolts on the fuel/oil cooler and retains the W6 cable in a spring clip to eliminate contact with adjacent fuel tube.</p> <p>ECP T142 - MEC RMA Throttler Improvement introduces an improved throttle couple and attaching bolts on both ends of the Main Engine Control to prevent the throttle coupling between the RMA and MEC PLA shaft from loosening from the MEC PLA shaft.</p> <p>ECP T144 - LPT Stg 1 Shroud Life Improvement to provide a shroud configuration that will consistently achieve a 4000 TAC inspection interval. The assembly will eliminate ingestion of flow path air and add a disassembly feature to the shrouds</p> <p>ECP T139 - Fuel Boost Pump Durability Improvement introduces a new Fuel Boost Pump with an increased orifice diameter. This change will prevent the oil supply source from being lost due to contamination in the oil system</p> <p>ECP T151 - Fuel Nozzle Moeller Fittings Introduction to replace the safety wire and to prevent fuel tube failures resulting from chafing of the core fuel manifold pig tail by the termination loop of the safety wire</p> <p>EMSP Improvements to upgrade the EMS from P03/P04/P06 to P09</p> <p>IDG- Air/Oil Heat Exchanger provide a solution to the bypass valve failures</p> <p>Pyrometer Improvements introduce a new pyrometer and new kit to replace the existing pyrometers to reduce maintenance requirements.</p> <p>ECP T158 Front Frame Strut Damper Migration Repair to reduce the potential for damper migration by reworking the product and field configurations .</p> <p>T2.5 Sensor Brazejoint Improvement develops a timely and economical field solution that has minimal customer impact/inconvenience and eliminates the need to replace the 1-2 High Pressure Compressor.</p> <p>CMC Flameholder develops a flameholder design that is more durable than the current HS188 component using ceramic materials.</p>			
F402 Engine A/V-8B:			
<p>ECP 3641 -Improved Bearing Bolting to correct torque stability of the No. 1 bearing bolted joint assembly and to prevent any detachment of the No. 1 bearing nut and cupwash which was identified as causal factors in a turbine failure and subsequent Class A Mishap.</p> <p>ECP - 3509 Improved P3 Limit Capsule Assembly increases fatigue life and corrects bellows failures.</p> <p>ECP 3586 - Incipient Blockage Indicator on FMU provides enhanced reliability and a more accurate warning of impending operation of the filter bypass valve.</p> <p>ECP 3578 - FMU Actuator Lever Clamp with improved attachment to valve operating shaft to prevent serration wear.</p> <p>ECP 3606 - INCO 718 Bolt introduces Inconel 718 material bolts in place of Jethete material bolts in four engine locations with superior material qualities.</p> <p>ECP 3682 HPC 2,3,4 Vanes to eliminate a hazardous condition associated with the HP compressor at high "g" levels by introducing a .003" shorter vane to allow for difference in coefficients of expansion.</p> <p>ECP 3709C2 IGVC Redesigned bushings introduces a set of modified pump floating bearing bushes embodying a longer locating diameter and reduced 'O' seal diameter to reduce thrust faces tilting away from the gear teeth side face.</p> <p>ECP F402-003 Encapsulated Wiring Harness improves the main electrical wiring harness on the F406 engine.</p> <p>ECP 3699 Plau Rear Bearing deletes the axial preload spring.</p> <p>ECP 3755 Revised LFC STG 2 Vane Stops will eliminate the requirement to partially strip the LP Compressor if the vane stop attachment bolts are inadvertently loosened whenever the Pressure Relief Shut Off valve is removed</p>			

F404 Engine F/A 18C/D:

ECP C63 Steel Compressor Case Modification to improve forward compressor case corrosion resistance

ECP E32 Main Fuel Control Block Change improvements to the Main Fuel Control to improve reliability by reducing the number of unscheduled MFC removals, mission aborts, and enhance aircraft readiness. Original MFC has a MTBF of 17,543 EPH's, the new configuration has a MTBF of 166,666 EPH's.

ECP A23 Ven Actuator Seal to replace the VEN actuator in its pre-modification configuration which continues to be a leading readiness degrader

ECP E41 ECU Tan-Tan Capacitor designed for the circuit boards of the engine control to eliminate source of in-flight failures with the silver-tantalum capacitors.

ECP F12 Improved Life Stage Fan Disk, as a result of an uncontained Stg 1 fan Disk field failure and severe damage to the engine and aircraft, a life reduction was induced. The kit for this ECP contains the Torlon spacer which allows the original fan blade configuration to be installed.

ECP E65 Alternator Connector Redesign, the internal sealing on the connector of the alternator stator is being changed from an internal rubber grommet-seal design to a woven glass sleeve design impregnated with epoxy varnish to correct deterioration resulting in an "open" or a "shorted" circuit.

ECP F11 Redesigned Vapor Relay, Isolator and Bracket due to obsolescence of the current material Eypel.

ECP E78 Main Fuel Control Selector Valve replaces the present configuration with a more durable tube having a separate tube holder. Present configuration results in engine power losses and inability to achieve afterburner operation

ECP E79 Power Lever Control Improvements to cost-reduced and non cost-reduced Power Lever Controls. The configuration has been redesigned to improve operability and maintainability.

ECP L15 Nr. 4 Bearing Rotating Air Seal Damper introduces an improved number 4 bearing rotating air seal damper to the F404. The redesigned damper increases resistance to handling damage and provides positive retention capability in the air seal.

ECP A27 VEN Position Transmitter Improvement incorporates a modified rod seal, scraper, and improved material to protect against contaminants which cause seal wear and resultant oil leakage.

ECP C67 MFC Manifold Redesign to correct Main Fuel Control (MFC) manifold failures which have resulted in engine core speed hang-up, fuel leakage and flameouts. New design incorporates a new MFC manifold and support bracket to replace the original.

ECP 70 T1 Caution Capacitor Improvement replaces the present configuration with an improved capacitor to eliminate T1 cautions caused by faulty C51 capacitors.

ECP E63 Bay Fire Ignition Source Elimination, this change eliminates two possible ignition sources for leaking fluids by reducing engine bay surface temperature and isolating the VEN cavity from the engine bay.

J52 Engine E/A 6/B, A-6, A-4:

ECP 95XA013 Redesigned Pressure Ratio and Compressor Stator Controls reduce the susceptibility of contamination that can cause friction between the shank and the reset diaphragm.

T58 Engine H-3, H-46:

ECP 58F-27 Improve Manifold kit reduces the possibility of fatigue/failure of the fuel manifold. Improved combustion liner anti-rotation pins and cap screw reduce wear and failure.

ECP 58N-18R1 Improve Reliability T-5 Harness; the current T-5 harness is susceptible to failures which results in lack of or erroneous T5 signal. The proposed T5 Harness with integral lead will reduce the T5 signal failure rate by an estimated factor of 10:1, improving system safety, reliability and maintainability.

T64 Engine H-53:

ECP 64E-55 Improved Single Ring Carbon Seals at the Nos 2,3, and 4 bearing positions with more durable single-ring seals.

ECP 64T-20 Mid Sump Drain system which will prevent accumulation of seal leakage oil in the cavities supporting the sump. The drain will route oil leaks to the engine's exhaust frame where it will be discharged overboard via a drain adapter tube.

T700 Engine H-2, H-60, AH-1:

ECP 122 Stage 3 Rotor Ring adds a stage three containment ring to the power turbine module on all T700-GE-401C and T700-GE-701C engines to compensate for the increase in temperature when these engines operate in aircraft equipped with infra red suppressors.

ECP 123 Stage 1 Blade Tip Corrosion Resistance will incorporate an improved tip material to preclude deterioration.

ECP 124 Exhaust Frame Drain Hole replaces oil rings and drill drain holes to prevent oil build up in the 730 strut of T-700 exhaust.

ECP 125 HydroMechanical Unit (HMU) Improvements prevent internal contamination in the Woodward Governor HMU

TF30 Engine F-14A:

ECP 95XA039 LDCV Assembly introduces a redesigned solenoid valve assembly featuring a vibration damping spring set against the plunger that will eliminate the wear metal problem which is the prime cause for failure

ECP 87XA046C1 Main Gear Box (MGB) Deaertion Carbon Seal eliminates oil leakage out of the overboard breather through a new de-oiler carbon seal assembly and new de-oiler gear shaft which increases the parts durability and decreases coke build up.

T56 Engine P-3, C-2, E-2, C-130:

ECP 2112R1 15 Micron Oil Filter replaces the 104 micron oil filter in both the power section and reduction gear box assembly pressure oil system with 15 micron oil filters on T56 engines.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

All engineering effort will be accomplished prior to procurement of kits

Exhibit P-3a

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E		160.6		54.9		35.4		44.2		39.7		47.5		41.6		37.4		73.1		84.2					
PROCUREMENT																									
Installation Kits																									
F110 Engine (F-14 B/D)																									
ECP T113 - Turbine Frame Forwd Fairg Redesign	35	0.303	36	0.404	80	0.816	80	0.821	60	0.636	46	0.492											337	3.472	
ECP T057 - HPT Shroud Cooling Mod	142	0.106	96	0.061	91	0.069																	329	0.236	
ECP T109 - Turbine Frame Oil Tube Bracket & Dmp	35	0.030	36	0.046	80	0.075	80	0.065	80	0.067	26	0.030											337	0.313	
ECP T119 - Exhaust Nozzle Hinge Joint Corrosion	138						62	0.450	60	0.435	20	0.145											280	1.030	
ECP T146 - Combuster Joint Wear	60	0.010	58	0.013	12	0.003	70	0.018	51	0.014													251	0.058	
ECP T121 - Nr.2 Bearing Seal Drain Tube Redesign	46	0.020			180	0.097	111	0.060															337	0.177	
ECP T086 - Vented IDG Ejector Valve					78	0.101	78	0.106	72	0.102	64	0.094	45	0.071									337	0.474	
ECP T130 - Master Chip Detector Relocation									30	0.189	60	0.378	60	0.385	60	0.393	60	0.404					270	1.749	
ECP T135 - W6 Cable Chafing Improvement							200	0.015	115	0.011													315	0.026	
ECP T142 - MEC RMA Throttle Improvement							200	0.054	137	0.037													337	0.091	
ECP T144 - LPT Stg 1 Shroud Improvement									60	0.240	60	0.245	60	0.251	60	0.256	30	0.131					270	1.123	
ECP T139 - Fuel Boost Pump Mod									60	0.120	60	0.124	60	0.129	60	0.132	30	0.070					270	0.575	
ECP T151 - Fuel Nozzle Moeller Fittings									70	0.154	70	0.161	70	0.168	60	0.147							270	0.630	
EMSP IMPROVEMENTS									45	0.112	60	0.150	45	0.120									150	0.382	
IDG- AIR/OIL HEAT EXCHANGER									106	0.217	165	0.350											271	0.567	
PYROMETER IMPROVEMENTS									30	0.075	60	0.150	60	0.156	60	0.163	60	0.172					270	0.716	
ECP-T158- FRONT FRAME DMPER MIGRA R							60	0.082	60	0.084	60	0.090	60	0.090	30	0.048							270	0.394	
T 2.5 SENSOR BRAZEJOINT IMPROVEMENT							60	0.012	120	0.024	120	0.024	120	0.024	60	0.012							480	0.096	
CMC FLAMEHOLDER							40	0.160	40	0.160	80	0.325	80	0.332	30	0.126							270	1.103	
T155 MEC IMPROVEMENT											30	0.150	30	0.156	30	0.159	60	0.326	60	0.330			210	1.121	
AFTC IMPROVEMENT											30	0.165	60	0.340	60	0.352	60	0.365					210	1.222	
F402 Engine (A/V-8B)																									
ECP 3641 - Improved Bearing Bolting	68	0.010	61	0.017	68	0.017	68	0.018	72	0.018	10	0.025											347	0.105	
ECP 3509 - Improved P3 Limiter Capsule	173	0.507			70	0.226	24	0.076	10	0.033													277	0.842	
ECP 3525 - AGB Drive Shaft	178	1.433	10	0.074	14	0.112	12	0.098															214	1.717	
ECP 3586 - Incipient Blockage Indicator on FMU	60	0.210			46	0.164	48	0.172	48	0.178	48	0.183	48	0.186	43	0.174							341	1.267	
ECP 3578 - FMU Actuator Lever Clamp							40	0.060	40	0.065	40	0.070	40	0.075	40	0.082	24	0.055					224	0.407	
ECP 3606 - INCO 718 BOLT									40	0.015	40	0.016	40	0.017	40	0.018	40	0.019					200	0.085	
ECP 3682 - HPC 2,3,4 VANES									60	0.200	55	0.190	40	0.175	45	0.212	24	0.113					224	0.890	
ECP 3725 - Improved DECU Mounting Rails	115	0.257			115	0.317	103	0.287															333	0.861	
ECP 3709C2 - IGVC Redesigned Bushings					25	0.078	35	0.109	48	0.149	48	0.149	50	0.155	54	0.170	54	0.173					314	0.983	
ECP F402-003 Encapsulated Wiring Harness									70	0.150	70	0.158											140	0.308	
ECP 3699 Piau Rear Bearing									85	0.136	45	0.072											130	0.208	
ECP 3763 FMU Mod													20	0.276	27	0.386	38	0.570	39	0.593			124	1.825	
ECP 3769 - DECU SOFTWARE			N/A	0.004	N/A	0.070																	0	0.074	
ECP 3757 - IGVC VACTRIC TRANSMITTER			18	0.030	22	0.020																	40	0.050	
ECP F402-002 ENGINE WIRING HARNESS IMPR	70	0.126			72	0.139	70	0.142															212	0.407	
ECP F402 HP Compressor Coating																	110	0.550	330	1.980	660	3.960	1100	6.490	

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
F404 Engine (F/A-18 C/D)																									
ECP 3755 - REVISED LPC STG 2 VANE STOPS			20	0.032	42	0.036	46	0.039	48	0.041													156	0.148	
ECP C63 - Steel Compressor Case Modification	515	7.364	360	5.355	140	2.082	140	2.105	28	0.420													1183	17.326	
ECP E32 - Main Fuel Control Block Change	1504	7.407	100	0.493	154	0.754	84	0.353	96	0.390													1938	9.397	
ECP A23 - VEN Acuator Seal	2989	0.961			600	0.204	650	0.221	646	0.194													4885	1.580	
ECP E41 - ECU Tan-Tan Capacitor	469	3.527	298	2.251			160	1.160	160	1.180													1087	8.118	
ECP F12 - Improved Life Stage 1 Fan Disk	503	0.143	300	0.073	300	0.078	300	0.082	300	0.086	90	0.027											1793	0.489	
ECP E65 - Alternator Connector Redesign	600	1.268	250	0.528	250	0.575	250	0.585	162	0.374	159	0.376											1671	3.706	
ECP F11 - Redesign Vapor Relay, Isolator & Brket									216	0.050	138	0.032											354	0.082	
ECP E78 - Main Fuel Control Selector Valve			353	0.061	528	0.092	528	0.092	528	0.092	131	0.023											2068	0.360	
ECP E79 - Power Lever Control Improvement					176	0.007	300	0.013	300	0.013	300	0.014	300	0.015	57	0.003							1433	0.065	
ECP E80 - Improved Anti-icing Valve Flow Indicator									0	0.000	450	0.492	580	0.638	680	0.816	676	0.811					2386	2.757	
ECP L15 - Nr. 4 Bearing Rotating Air Seal Damper							400	0.080	400	0.084	400	0.088	400	0.092	313	0.078							1913	0.422	
ECP A27 - VEN Position Transmitter Improvement	300	0.223			300	0.246	300	0.258	300	0.271	300	0.284	300	0.300	245	0.314							2045	1.896	
ECP C67 - MFC Manifold Redesign							84	0.226	540	1.458	545	1.495	450	1.305	444	1.285							2063	5.769	
ECP E70 - T1 Caution Capacitor Improvement	340	0.510			315	0.502	320	0.512	300	0.470	300	0.485	223	0.379	197	0.335							1995	3.193	
ECP E63 - Bay Fire Ignition Source Elimination	711	1.093			550	1.281	500	1.163	318	0.731													2079	4.268	
ECP - SLOTTED FLAMEHOLDER											116	2.316	108	2.164	107	2.152	151	3.085					482	9.717	
ECP F404 Turbine Blade Redesign																125	0.587	376	1.880	750	3.975	1251	6.442		
J52 Engine (E/A-6B, A-6, A-4)																									
ECP 92XA158C1 - Diffusion Bonded IGVs	284	9.015	86	1.348																			370	10.363	
ECP 95XA013 - Redesign Pressure Ratio & Compressor Stator Controls					26	0.051	40	0.091	48	0.107	38	0.092	38	0.101	38	0.106	38	0.110	38	0.124			304	0.782	
T58 Engine (H-3, H-46)																									
ECP 58T-15 - Improved Nr.3 Bearing O-Ring	712	3.291			18	0.083																	730	3.374	
ECP 58N-17 T5 Thermocouple Harnesses	683	3.333			100	0.463	85	0.389															868	4.185	
ECP 58T-16C2 - NR. 3 SUMP IMPROVEMENT	122	0.113	229	0.211	338	0.312																	689	0.636	
ECP 58F-27 - IMPROVED FUEL MANIFOLD KIT	128	0.074			226	0.125	191	0.115	191	0.115													736	0.429	
ECP 58N-18R1 - IMPROV RELIABILITY T5 HARNESS			232	0.652	202	0.523	202	0.526	210	0.550	102	0.270											948	2.521	
TF34 Engine (S-3)																									
ECP TF34 - JAX 001 - ENGINE COMPRESSOR STATOR CASE			44	0.017	150	0.110			0	0.000	52	0.110	64	0.136	64	0.136	24	0.051					398	0.560	
T64 Engine (H-53)																									
ECP 64E-55 - Impr. Single Ring Carbon Seals	180	0.403			60	0.090	60	0.099	60	0.109	60	0.120	60	0.130	60	0.141	44	0.106					584	1.198	
ECP 64T-20 MID SUMP DRAIN	157	0.399			324	0.614	273	0.559	274	0.684													1028	2.256	
ECP T64 Improved Main Fuel Control																	95	0.285	301	0.903	602	1.806	998	2.994	
T700 Engine (H-2, H-60, AH-1)																									
ECP 70017C1 Interstage Seal Improvement	418	0.636			132	0.230																	550	0.866	
ECP 121 - Nr.2 Bearing Housing & Damper Improvement											150	1.200	200	1.620	200	1.660	200	1.700	200	1.740	348	3.097	1298	11.017	
ECP 122 - Stage 3 Rotor Ring									255	0.510	209	0.439	209	0.439	209	0.460	209	0.460	207	0.476			1298	2.784	
ECP 123 - Stage 1 Blade Tip Corrosion Resistance									40	0.600	50	0.755	136	2.077	169	2.603	189	2.911	190	2.945			774	11.891	
ECP 124 - Exhaust Frame Drain Hole									200	0.200	200	0.200	200	0.200	200	0.220	200	0.220	200	0.220	98	0.108	1298	1.368	
ECP 125 - HydroMechanical Unit (HMU) Improvements									52	0.208	52	0.213	95	0.399	104	0.447	108	0.497	108	0.497			519	2.261	
ECP 126 - HMU O-Ring											85	0.340	153	0.627	173	0.709	176	0.792	176	0.792	16	0.000	779	3.260	
ECP T700 Turbine Blade Redesign																	57	0.400	460	3.320	900	6.660	1417	10.380	

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
TF-30 Engine(F-14A)																									
ECP 93XA008 - Automatic Restart Switch	234	0.073	170	0.044	210	0.056	169	0.047																783	0.220
ECP 95XA039 - LDCV Assembly			188	0.027	168	0.039	170	0.035	158	0.031	99	0.024												783	0.156
ECP 87XA046C1 - MGB Deaeration Carbon Seal	340	0.079	134	0.019	114	0.017	120	0.018	75	0.011														783	0.144
ECP 91XA093A - Nr.4 Bearing Seal Torque Pins	418	0.096	75	0.029	200	0.081	90	0.049																783	0.255
T56 Engine (P-3, C-2, E-2, C-130)																									
ECP 2081 - Rub Tolerant Vanes	372	12.582																						372	12.582
ECP 2112R1 - 15 Micron Oil Filter	556	0.599			860	0.753	860	0.779	576	0.507	576	0.511	576	0.515										4004	3.664
ECP 2115	35	0.057	35	0.055	35	0.055																		105	0.167
Starters																									
ECP AYC-1078 - Cut-out Switch	100	0.248																						100	0.248
COMPLETED ECPS FROM PRIOR YRS		96.621																							
Installation Kits N/R																									
Installation Equipment																									
Installation Equipment N/R																									
Engineering Change Orders																									
Data																									
Training Equipment																									
Support Equipment																									
ILS		0.538		0.200		0.580		0.680		0.480		0.235		0.228		0.245		0.253		0.232				0	3.671
Other Support		17.577		2.074		3.137		0.620		0.450		0.238		0.254		0.200		0.150		0.146				0	24.846
Interim Contractor Support																								0	0.000
Installation Cost	4577	21.485	4147	0.971	7221	1.807	8634	1.537	8871	1.558	8296	1.374	6390	1.290	4824	1.221	4004	0.929	2292	0.501	2638	CONT.	61894	32.673	
TOTAL PROCUREMENT		192.727		15.089		17.287		15.238		15.595		15.689		16.015		15.961		16.295		16.679		19.606	0.0	356.181	

Notes:

1. Totals do not add due to rounding
2. Asterisk indicates amount less than 51K

Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: All Active In-Service Navy and Marine Corps Aircraft MODIFICATION TITLE: Power Plant Changes (OSIP: N/A)

INSTALLATION INFORMATION: The tables below list the quantities, installation schedules, and costs for those ECPs for which there is an installation cost. Of those ECPs with installation costs, three are not shown as they are labor-only modifications and require no kit. The reason they are not shown in these tables is that the procurement quantity and installation quantities would not be equal.

METHOD OF IMPLEMENTATION: Current with engine/module repair (where installation cost is zero), or by forced retrofit (shown below).

ADMINISTRATIVE LEADTIME: Average 6 months Months PRODUCTION LEADTIME: Average of 12 months

CONTRACT DATES: FY 1999: Varies FY 2000: Varies

DELIVERY DATE: FY 1999: Varies FY 2000: Varies

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 1998 & PY (3220) kits	242	323	649	785	1,054	1,368	1,042	1,115	233	249															3,220	3,517
FY 1999 (1250) kits							270	235	821	1,040	159	169													1,250	1,444
FY 2000 (1131) kits									249	103	823	1,021	59	64											1,131	1,188
FY 2001 (1240) kits											185	27	1,055	1,008											1,240	1,035
FY 2002 (1263) kits												216	58	1,047	945										1,263	1,003
FY 2003 (1064) kits														154	115	910	925								1,064	1,040
FY 2004 (746) kits																30	36	716	501						746	537
FY 2005 () kits																									0	0
To Complete () kits																									0	0
TOTAL	242	323	649	785	1,054	1,368	1,312	1,350	1,303	1,392	1,167	1,217	1,330	1,130	1,201	1,060	940	961	716	501	0	0	0	9,914	10,087	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	891	280	260	260	254	335	337	340	300	323	330	330	320	290	300	280	297	340	345	345	300	320	300	290	291
Out	891	270	260	260	264	320	330	350	312	318	325	340	320	285	295	285	302	328	340	335	327	300	310	295	296

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	240	230	240	230	191	185	180	160	0	9914
Out	220	245	245	230	165	150	200	201	0	9914

Exhibit P-40, BUDGET ITEM JUSTIFICATION										DATE: February 1999			
APPROPRIATION/BUDGET ACTIVITY							P-1 ITEM NOMENCLATURE						
Aircraft Procurement, Navy/APN-5 Aircraft Modifications							Common ECM Modifications						
Program Element for Code B Items:							Other Related Program Elements						
	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
QTY													
COST (In Millions)	470.0	A	61.9	31.4	36.8	50.6	67.6	77.6	79.8	108.3	109.4	661.9	1,707.6
This line item funds common equipment (B kits) for multiple aircraft. The overall goal of the modification budgeted in FY 00 is to provide a reprogrammable radar and missile warning system, provide attacking missile declaration and sector direction finding, laser detection, and self-protection capability devices to applicable user aircraft.													
<u>QSIP No.</u>	<u>Description</u>	<u>Prior Years</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>Complete</u>	<u>Total</u>
114-85	AN/ALR 67(V)2	202.1	0.1	2.0	7.0	4.9	5.2	5.1	5.1				231.4
72-88	AN/AAR 47 MAWS Hardware	121.1	6.6	17.1	9.8	5.8	12.9	12.8				109.4	247.7
14-90	AN/APR-39 (V)2 RWR & AN/AVR 2 Hardware	111.4	10.6	12.4	8.8	9.5	7.8	10.9	13.3	11.9	12.7	62.7	272.0
30-92	LAU 138A/A BOL System	35.5	0.3			0.7	0.7	0.6	0.8	0.7	0.8	3.9	44.0
22-97	ASPJ		44.3										44.3
26-99	AN/ALR 67(V) 3& 4				11.2	24.6	18.4	17.1	21.4	21.4	23.6	192.8	330.5
06-00	ALE-39 to 47 Retrofit					5.1	5.0	5.2	6.3	5.8	6.0	39.4	72.8
4-01	RF DECM (F/A-18 C/D)						12.0	15.0	20.0	46.2	53.3	111.0	257.5
03-01	IDECM Systems						5.6	11.0	12.9	22.3	13.0	142.6	207.4
	Total	470.0	61.9	31.4	36.8	50.6	67.6	77.7	79.8	108.3	109.4	661.9	1,707.6
Note: Totals may not add due to rounding.													

Exhibit P-3a Individual Modification

MODIFICATION TITLE: AN/ALR-67(V)2 Radar Receiving Set (OSIP 114-85)

MODELS OF SYSTEMS AFFECTED: F/A-18, F-14, AV-8B TYPE MODIFICATION: Mission Capability

DESCRIPTION/JUSTIFICATION: This Operational, Safety and Improvement Program (OSIP) provides for the procurement of common equipment for the F/A-18, AV-8B, and F-14 aircraft. Provisions, i.e., airframe changes needed for the installation of this equipment, are budgeted separately.

The AN/ALR-67(V)2 is an airborne radar warning receiver and EW Bus controller system for advanced tactical aircraft. The TEMP, CNO Project Number 521, AN/ALR-67(V)2, defines the requirement. The system provides radar band frequency coverage, displays threat azimuthal bearing, provides audio warning for critical threats and coordinates the operation of onboard electronic warfare equipment. The ALR-67(V)2 is an old system that is planned to be used through the year 2015 on the F/A-18C/D and AV-8B aircraft and 2007 on the F-14. The total number of systems is 1209, including F-14, F-18 A,B,C,D, and AV-8B aircraft. A rewrite of the AN/ALR-67(V)2 software in High Order Language (HOL) will improve maintainability to allow for future growth and reduced technical risk, costs and schedule. The HOL software will be used to implement low cost, low risk performance upgrades to the system. This upgrade is planned to provide increased

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The contractor delivered the HOL software development in first quarter 99. Development and testing is being conducted within the government with release scheduled for FY 2000. Due to an increase in program funds in FY 99, initial performance upgrades will be incorporated in the FY 2000 scheduled software release, with follow-on improvements slated for release in FY 2002. A contract award is planned for second quarter FY 1999 for the initial performance upgrades. The upgrade program will improve the AN/ALR-67(V)2 for F-14B/D and AV-8B (230 aircraft) that will not receive the AN/ALR-67(V)3.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
AN/ALR-67(V)2 kit	133	23.3																						133	23.3
Installation Kits N/R																									
Installation Equipment																									
V2 Upgrade Equip	194	45.7				8	0.1	123	1.1	135	1.4	90	1.8	120	3.0									670	53.2
Installation Equipment N/R							1.9		1.1		0.4		0.4												3.8
Engineering Change Orders																									
V2 Upgrade Equip		72.1				*																			72.2
Data		3.0					0.3		0.5		0.5		0.2		0.2										4.6
Training Equipment		0.8							0.1		0.1		0.1												1.0
Support Equipment		11.6				0.1	1.5		0.1		0.1		0.1												13.5
ILS		2.8				0.3	0.2		0.3		0.3		0.4		0.4										4.7
Other Support		42.8				1.5	3.0		1.7		2.3		2.1		1.5										55.1
Interim Contractor Support				0.1																					0.1
Installation Cost																									
Total Procurement		202.1		0.1		2.0	7.0		4.9		5.2		5.1		5.1										231.4

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: AN/AAR-47 Missile Approach Warning System (MAWS) (OSIP 72-88)

CH-46E, CH-53A/D/E, RH-53D, MH-53E, UH-1, AH-1, C-130,

MODELS OF SYSTEMS AFFECTED: P-3, HH-60H, SH-60B, VH-3, VH-60, V-22 TYPE MODIFICATION: Mission Capability

DESCRIPTION/JUSTIFICATION: The AN/AAR-47 warns of approaching missiles by detecting radiation associated with the rocket motor and automatically initiates flare ejection. Detection algorithms are used to discriminate against non-approaching radiation sources. The AN/AAR-47 is a passive missile approach warning system consisting of four sensor assemblies housed in two or more sensor domes, a central processor unit and a control indicator. The AN/AAR-47 provides attacking missile declaration and sector direction finding (DF) and will be interfaced directly to the ALE-39/47 countermeasures dispenser. Without the AAR-47, helicopters and Fixed Wing Aircraft have no capability to detect an infrared (IR) missile attack.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Milestone II was passed in 1982. A contract for eight Engineering Models was awarded to Honeywell (now Lockheed Martin) in Mar 83, with fixed-price options for up to 810 production systems. OPEVAL (on the CH-53E) was passed in Oct 86.

Milestone III was passed in May 87 for full production with extension of application to all other platforms. Production of 709 systems and preparation of a Level III data package followed, with deliveries completed in early 1992. Under full and open competition, a contract for up to 1200 systems was awarded to Hercules (now Alliant) in Dec 91. Actual orders were for 1122 systems with deliveries completed in Jan 97. Under full and open competition, a contract for up to 1077 systems was awarded to Lockheed Martin in Sep 95. Deliveries began in Jan 97 and are scheduled to be completed in Jun 99.

There are two upgrade programs: FY-97/98/99 funds a microprocessor upgrade to replace the current 8086 board with an 80486 running new software to enhance threat declaration and to better control false alarms. This software will deliver the maximum performance attainable using current sensors. FY-98 and beyond also funds a sensor upgrade. The current sensors are starting to wear out after 5 years, due to temperature sensitive materials. The new sensors will remove this limitation and will also provide improved performance. This will allow the AAR-47 to better respond to new threats via software changes only. Both upgrades are 100 percent retrofit. There are 2500 systems for installation on all applicable aircraft. The TEMP # 543 documents the current requirement. An ORD is in draft (number TBD) to document existing requirements for the upgrades.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E		24.0																							24.0
PROCUREMENT																									
Installation Kits																									
Installation Kits N/R																									
Installation Equipment																									
AAR-47 Equip	1,250	90.2																						1,250	90.2
Installation Equipment N/R																									
CP Upgrade N/R		4.7																							4.7
Sensor Upgrade N/R						12.3																			12.3
Engineering Change Orders																									
CP Upgrade Equip ECO			405	2.3	247	1.5	548	3.2														50	47.8	1,250	54.8
Sensor Upgrade Equip ECO							60	3.8			170	12.2	174	12.3								846	59.2	1,250	87.5
Data		0.3				*				*															0.3
Training Equipment	4	0.6				*				*														4	0.6
Support Equipment		4.3										1.0													5.3
ILS		3.8		0.3		0.2		0.3			0.2														4.8
Other Support		17.1		4.0		3.1		2.5			0.6		0.6									2.4			34.9
Interim Contractor Support																									
Installation Cost		*																							*
Total Procurement		121.1		6.6		17.1		9.8		5.8		12.9		12.8									109.4		247.7

Notes:

1. Totals may not add due to rounding
2. Asterick indicates amount less than \$50K

Exhibit P-3a Individual Modification

MODIFICATION TITLE: AN/APR-39A(V)2 /AN/AVR-2/2A(V) Electronic Warfare Receivers (OSIP 14-90)

MODELS OF SYSTEMS AFFECTED: AN/APR-39(V)2, AH-1/W,AH-1Z,UH-1N,UH-1Y,HH-60H,CH-53D/E,MH-53E,KC130F/R/T,VH-3D TYPE MODIFICATION: Mission Capability
VH-60N,SH-60B,MV-22, AN/AVR-2/2A(V), AH-1W,AH-1Z,MV-22,UH-1N,UH-1Y,VH-3,VH-60,HH-60H,SR-60R

DESCRIPTION/JUSTIFICATION: The AN/APR-39A(V)2 Radar Signal Detecting Set (RSDS) is designed for use on US Marine Corps, US Navy, and US Army Assault Support aircraft to provide onboard warning of radar threats. The AN/APR-39A(V)2 provides control and display of the entire Assault Support Equipment(ASE) Suite, and is required for control and display of the AN/AVR-2/2A(V) and the AAR-47. The system consists of five antennas, one Cockpit Control Unit, one or two Display indicators, two to four receivers, and one processor. The AN/AVR-2/2A(V) laser detection set (LDS) is designed for use on U.S. Army, U.S. Marine Corps, and U.S. Navy Assault Support aircraft. The AN/AVR-2/2A(V) reduces the susceptibility of helicopters to attack from laser guided and laser aided threats by providing warning of laser illumination. The system consists of four to six sensor units and one or two comparators. The system requires the APR-39A(V)2 Cockpit Control Unit for On/Off and BIT. AVR-2/2A(V) warnings are displayed on the APR-39A(V)2 cockpit display.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The U. S. Army awarded a production contract for the AVR-2 in FY 90. Production contract for the AVR-2A(V) was awarded in FY 94. Procurement for the U.S. Marine Corps and the U.S. Navy will be via Military Interdepartmental Purchase Request (MIPR) to the U.S. Army.

The AN/APR-39A(V)2 is in the production phase of development (MSIII 3Q/96). The U.S. Navy is the lead service of this joint service program. The U.S. Army awarded the production contract 3Q/96, and continues to administer the contract. First Article Test (FAT) system delivery to the U. S. Navy is expected in FY 99. Delivery of production systems is expected in FY 99. Procurement of an AN/AVR-2/2A(V) in the AN/APR-39(V)2 for the additional requiring platforms will be by extension of application with the required follow-on test and evaluation conducted on each platform.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E		6.8																						6.8
PROCUREMENT																								
Installation Kits																								
Installation Kits N/R																								
Installation Equipment																								
AN/AVR-2/AN/APR-39A Equip**	464	67.1	39	5.5	60	8.7	20	3.2	40	5.7	35	5.1	70	9.0	75	11.4	63	9.9	64	10.5	367	61.9	1,297	198.0
Installation Equipment N/R		16.7				*																		16.7
Engineering Change Orders																								
Equip ECO		8.3				0.9		1.1		0.4		0.4		0.6		0.4		0.4		0.4				12.6
Data		0.8		*		*		*		*		*		*		*		*		*		0.1		1.0
Training Equipment		0.7		0.1		0.2		*		0.1		0.1				*		*		*				1.1
Support Equipment		1.9		0.1		0.1					*				*		*		*					2.1
ILS		4.5		0.6		0.4		0.1		0.4		0.3		0.6		0.3		0.4		0.4				8.0
Other Support		11.4		4.4		2.1		4.4		2.9		2.0		0.7		1.2		1.1		1.3		0.8		32.4
Interim Contractor Support																								
Installation Cost																								
Total Procurement		111.4		10.6		12.4		8.8		9.5		7.8		10.9		13.3		11.9		12.7		62.7		272.0

Notes:

1. Totals may not add due to rounding 3. APR-39A(V)2: 62 install quantity kits procured for test assets, SSA, simulators, and maintenance trainers.
2. Asterisk indicates amount less than \$50K 4. Procurement of 31 APR-39A(V)2 kits for KC-130 replaces APR-39A(V)1 kits currently installed and will utilize existing "A" kits.

Exhibit P-3a Individual Modification

MODIFICATION TITLE: LAU 138A/A BOL System (OSIP 30-92)

MODELS OF SYSTEMS AFFECTED: F-14 A/B/D and F/A-18 C/D and upgrade and other aircraft. TYPE MODIFICATION: Mission Capability

DESCRIPTION/JUSTIFICATION: The original Operational, Safety and Improvement Program (OSIP) provided for the initial installment, procurement of common ECM equipment (LAU-138/BOL), logistics, etc. for the F-14 A/B/D and upgrade aircraft. The BOL system (LAU-138A/A) is composed of an electro-mechanical chaff dispenser (D-46/ALE-39), a modified "Sidewinder" guided missile launch rail, a Nitrogen Receiver, and an Interconnecting Box (J-4937/ALE-39). The system was procured on a basis of two systems per aircraft, but up to four may be carried on the F-14. A total of 400 LAU-138A/A systems were procured. The associated remaining aircraft Kit install schedule/funding by PMA 241 is found in OSIPs 33-92 and 44-92. This update reflects funding for Engineering Changes required to the pool of launchers/dispensers for changes necessary for compatibility with the new ALE-47 Countermeasures Dispensing System, the upgraded ALE-39 to 47 retrofit conversions (OSIP 6-00), and addresses changes to the launcher to correct some corrosion issues to improve reliability and expendable accountability.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: 400 LAU 138A/As were procured as non-developmental items under two separate contracts and are now operationally deployed on F-14 aircraft. Full logistics support and spares support are not yet in place. 25 Common Rack and Launcher Test Sets (CRALTS) adapters are needed to fill SERMIS requirements to replace the interim ULM-5 Test set. Two FCMD BOL dispenser configurations were provided under a Foreign Comparative Test Program and six more are needed for evaluation on the F/A-18 C/D, AV-8B, and other aircraft. The pool of 400 launchers under PMA 201 control will be modified by a contractor and/or Depot level field level teams for ALE-47 compatibility and improved reliability/accountability at the estimated rate of 35-50 launchers per year.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
RDT&E		5.8																							5.8	
PROCUREMENT																										
Installation Kits D46-ALE-39	54	0.4							10	0.1	35	0.4	37	0.4	48	0.6	45	0.5	47	0.6	178	2.4	454	5.5		
Installation Kits N/R		0.2								0.3															0.4	
Installation Equipment																										
Equip	1,630	24.8																							1,630	24.8
Installation Equipment N/R		0.1																								0.1
Engineering Change Orders																										
Equip ECO TBD		1.8																								1.8
Data		0.6																								0.6
Training Equipment		0.2																								0.2
Support Equipment		2.8							0.1	0.1																3.0
ILS		3.0		0.1					*	*																3.2
Other Support		1.6		0.1					0.2	0.2			0.2		0.2		0.2		0.2		0.2		1.5			4.4
Interim Contractor Support																										
Installation Cost																										
Total Procurement		35.5		0.3					0.7	0.7			0.6		0.8		0.7		0.8		3.9				44.0	

Notes:

- Totals may not add due to rounding
- Asterisk indicates amount less than \$50K.

Exhibit P-3a Individual Modification

MODIFICATION TITLE: AN/ALR-67(V)3&4 Radar Receiving Set, (OSIP 026-99)

MODELS OF SYSTEMS AFFECTED: F/A-18 TYPE MODIFICATION: Mission Capability

DESCRIPTION/JUSTIFICATION: This Operational, Safety and Improvement Program (OSIP) provides for the procurement of common equipment for the F/A-18. Provisions, i.e., airframe changes needed for the installation of this equipment, are budgeted separately.

The AN/ALR-67(V)3 is a radar warning receiver designed to enhance pilot situational awareness by providing accurate identification, lethality and azimuth displays of hostile and friendly emitters. It also controls the electronic warfare (EW) data bus and interfaces with other EW systems, the onboard radar, airborne mission computer, and other weapons systems. The Radar Warning Receiver's (RWR) Operational Requirements Document (ORD) number is 360-88-94 dated 27 May 94. The total number of systems is 698 (150 F/A-18 C/Ds and 548 F/A-18 E/Fs).

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The AN/ALR-67(V)3 system is in Engineering and Manufacturing Development. An OP Assessment was conducted in September 1994. A test asset procurement contract for 20 production representative systems to support OPEVAL/FOT&E was awarded in November 1994. These production representative systems are in test. An LRIP was approved in May 1998. LRIP systems will be fielded after OPEVAL is complete. OPEVAL began in June 98 and is scheduled for completion in Dec 98 to support a planned FRP decision in Mar 99. Until adequate quantities can be procured to meet the 1:1 inventory requirement for F/A-18, ALR-67(V)3 systems will be crossdecked to forward deployed units with ALR-67(V)3 A-kits installed.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E		173.9		11.9		15.6		2.4																	203.8
PROCUREMENT																									
Installation Kits																									
Installation Kits N/R																									
Installation Equipment																									
AN/ALR-67(V)3 Equip **							5	8.2	10	16.7	9	16.7	8	14.7	10	18.3	10	18.4	11	20.3	87	160.9	150	274.2	
Installation Equipment N/R										5.6															5.6
Engineering Change Orders																									
Equip ECO											0.2		0.7		0.7		0.5		0.5			4.3			6.9
Data							*		*						0.2										0.2
Training Equipment																									
Support Equipment								0.1		0.1							*		*			0.3			0.6
ILS								*		0.1					*		*		*			0.4			0.6
Other Support								2.8		2.1		1.5		1.7		2.2		2.4		2.7		26.9			42.3
Interim Contractor Support																									
Installation Cost																									
Total Procurement								11.2		24.6		18.4		17.1		21.4		21.4		23.6		192.8			330.5

Notes:

- Totals may not add due to rounding
 - Asterisk indicates amount less than \$50K
- ** Unit Cost greater for C/D Aircraft.

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: AN/ALE-47 Dispenser System Retrofit (OSIP 06-00)

MODELS OF SYSTEMS AFFECTED: EA-6B(96), F-14B/D (107), F/A-18 C/D (LOTS 10-17(527), S-3B(114), C-130T(20), KC-130F(35), I TYPE MODIFICATION: Mission Capability

DESCRIPTION/JUSTIFICATION: The replacement of the AN/ALE-39 Dispenser System with the AN/ALE-47 Dispenser System will correct some serious safety problems while at the same time greatly improve aircraft survivability. The AN/ALE-39 system has serious problems with Things Falling Off Aircraft (TFOA) as well as numerous occurrences of uncommanded firing of chaff and flare stores. The reliability of the ALE-39 is another major factor with continuous reports of hung or unfired stores, a serious ground safety concern as well as a serious aircraft survivability concern. The AN/ALE-47 System has been developed to correct the safety issues of the ALE-39. It is a Threat Adaptive Countermeasures System designed to counteract the threats of today's hostile environments. USD(Acq) memo of Nov 86 directed U.S. Navy and U.S. Army to participate in EMD phase. Air Force Statement of Operational Requirements Document (SORD) number 341.88-11-D of 8

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

The AN/ALE-47 System is in production and being installed in multiple U.S. Navy and Marine aircraft. MS III decision awarded Mar 93. FY 00 systems to be procured under Air Force contract F33657-96-D-0001. FY 01-05 systems to be procured under follow on ID/IQ contract.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Installation Kits N/R																									
Installation Equipment																									
AN/ALE-47 Equip									86	3.7	99	4.2	103	4.3	120	5.1	112	4.8	116	4.9	738	31.4	1,374	58.4	
Installation Equipment N/R									0.5						0.3								1.8	2.5	
Engineering Change Orders																									
Data																									
Training Equipment																									
Support Equipment									0.2		0.5		0.5		0.6		0.5		0.6				3.9	6.7	
ILS									0.1		0.1		0.1		0.1		0.1		0.1				0.3	0.6	
Other Support									0.7		0.3		0.3		0.3		0.5		0.5				2.1	4.6	
Interim Contractor Support																									
Installation Cost						*																			0.0
Total Procurement						*			5.1		5.0		5.2		6.3		5.8		6.0			39.4		72.8	

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K.

Exhibit P-40, BUDGET ITEM JUSTIFICATION								DATE: February 1999					
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications								P-1 ITEM NOMENCLATURE Common Avionics					
Program Element for Code B Items:								Other Related Program Elements					
	Prior Years	ID Code	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
QTY		A											
COST (In Millions)	292.4	A	95.4	127.6	100.9	81.6	82.1	65.0	63.6	61.9	62.6	36.7	1,069.8
<p>This line item funds common avionics equipment for multiple aircraft. With the exception of OSIPs 43-94 (Flight Data Recorders), 14-97 (KC-130T GPWS), 17-98 (Helo GPWS), and 24-99 (CAS), the individual aircraft platforms fund the "A" kits and installation in the appropriate aircraft line.</p> <p>The specific modifications budgeted and programmed are: (1) The NAVSTAR GPS (Global Positioning System) is designed to provide a highly accurate passive position (16 meters) velocity (0.1 meter/sec) and time to users worldwide in all weather conditions. The GPS will interface with communication, navigation, and weapon systems equipment (standard attitude heading reference systems, inertial navigation systems, on-board computers, etc.) in selected applications. GPS is a DoD mandated requirement for all aircraft operating in the National Air Space System after the year 2000. (2) The Structural Data Recording Set records the flight parameters necessary to accurately determine, track, and manage the fatigue life of the aircraft and critical structural components. Fatigue life monitoring is the only means to ensure the structural life safety and to maximize the service life of fleet aircraft. (3) The AN/ARC-210 Electronic Protection (EP) Combination Radio provides dual UHF capability for CV based TACAIR; VHF AM for close air support and maritime channels; VHF AM for air traffic control; and EP capabilities. The AN/ARC-210 can be controlled by either a remote control unit or via MIL-STD-1553 multiplex data bus. (4) The Crash Survivable Flight Incident Recorder is a crash hardened recorder which will be used in support of aircraft mishap and incident investigations. (5) The Embedded Global Positioning System/Inertial Navigation System (EGI) contains full Precise Position Service GPS on a single electronic module, plus a state-of-the-art Ring Laser Gyro inertial navigation system. (6) The AN/ARC-182 Reuse Programs utilizes previously procured AN/ARC-182 systems which will become available as the AN/ARC-210 system is retrofitted into Navy aircraft. (7) The Ground Proximity Warning system provides visual and aural warnings to the pilot when the aircraft is in conditions that could result in a controlled flight into terrain accident. (8) The Collision Avoidance System (CAS) will provide a display of situation awareness to aid in the prevention of midair mishaps. (9) The AWW-13 data link pod provides Man-In-The-Loop weapon control for Walleye, SLAM ER, and JSOW Unitary precision guided munitions. (10) The Tactical Air Moving Map Capability (TAMMAC), the common solution for US Naval Aviation, provides a common tactical aircraft moving map and data loading capability and replaces current obsolete Fleet equipment. The overall goal of the modifications budgeted in FY 2000 is to procure the common equipment required for the individual aircraft platforms. The specific modifications budgeted and programmed are:</p>													
(TOA, \$ in Millions)													
OSIP No.	Description	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total
71-88	NAVSTAR GPS (Hardware)	137.4	34.2	54.2	29.3	9.3	17.9	14.1	24.2	3.4	3.4		327.3
14-92	SDRS (Hardware)	20.4	1.0	0.3									21.8
4-94	AN/ARC-210 (Hardware)	88.6	27.7	31.0	25.2	20.0	17.5	16.1	11.4	29.2	16.6	25.9	309.2
43-94	Flight Incident Recorders	27.1	11.4	14.3	6.1	7.4	7.6	7.4	6.8	2.1	0.8	4.2	95.1
38-95	EGI (Hardware)	18.1	19.1	9.9	11.1	4.7	4.3	1.5	0.8	14.2	32.4	6.6	122.7
40-95	AN/ARC-182 Reuse Program	0.8	0.3	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.1		2.6
14-97	KC-130T GPWS		1.9	4.3	7.7	14.2	9.7	7.7	4.8	4.0	3.5		57.7
17-98	Helo GPWS			8.9	12.6	11.2	9.8	8.0	6.2	4.3	1.0		61.9
22-98	AWW-13			2.4									2.4
25-98	Collision Avoidance System			1.9	8.5	14.7	15.2	10.2	5.4	0.5			56.5
-03	Tactical Air Moving Map Capability							3.9	3.9	3.9	4.9		12.7
	Total	292.4	95.4	127.6	100.9	81.6	82.1	65.0	63.6	61.9	62.6	36.7	1069.8
Note: Totals may not add due to rounding.													

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: Global Positioning System (GPS) (OSIP 71-88)

MODELS OF SYSTEMS AFFECTED: All aircraft TYPE MODIFICATION: Common Avionics (Safety) (Added Capability)

DESCRIPTION/JUSTIFICATION: The NAVSTAR GPS is designed to provide highly accurate passive position (16 meters), velocity (0.1 meter/sec) and time to users worldwide in all weather conditions. GPS will be integrated with communication, navigation, and weapon systems equipment (attitude heading reference systems, inertial navigation systems, mission computers, etc.). This OSIP procures only the GPS B-kit equipment (receiver, CDNU, DDS, SDC, etc.) as required for the above platforms. Hardware configuration varies depending on the TMS of the aircraft. Approximately 2500 aircraft will be modified with equipment provided through this OSIP. The Global Positioning System Operational Requirement Document (ORD) 003-78 dated 22 Jan 90 was based on an Air Force General Operating Requirement (GOR) dated 28 Jan 1978.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The NAVSTAR GPS program completed Phase II (Full Scale Engineering Development) and completed Milestone IIIA (Approval for Limited Production) in June 1986. Milestone IIIB (Approval for Full Production) was completed in January 1992. Research, Development, Test and Evaluation, Navy (RDT&E,N) is funded under program element #0604777N.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
RDT&E																										
PROCUREMENT																										
Installation Kits																										
Installation Kits N/R																										
Installation Equipment	1,302	103.0	262	24.2	334	33.0	133	11.9	42	2.2	32	11.7	14	11.4	14	21.5	13	1.4	13	1.4			2,159	221.7		
Installation Equipment N/R				1.8		8.2		6.8																	16.8	
Engineering Change Orders																									0.0	
Data		2.7		1.0		1.0		1.0		1.0		1.0		1.0		1.0		1.0		1.0					11.7	
Training Equipment	68	4.6	9	0.7	32	2.3	5	0.2	2	*	2	*	2	*	2	*									122	7.8
Support Equipment		0.3																								0.3
ILS																										0.0
Other Support		26.7		6.5		9.8		9.5		6.1		5.1		1.6		1.7		1.0		1.0						69.0
Interim Contractor Support																										0.0
Installation Cost																										0.0
Total Procurement		137.3		34.2		54.2		29.3		9.3		17.9		14.1		24.2		3.4		3.4					327.3	

Notes:

1. Totals may not add due to rounding.
2. Asterisk indicates amount less than \$50K.
3. Installation Equipment line includes \$10.0M in FY01, \$10.0M in FY02 and \$20.0M in FY03 for Navigation Warfare (NAVWAR)/GPS Modernization.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: All aircraft

MODIFICATION TITLE: Global Positioning System (GPS) (OSIP 71-88)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: This equipment is provided to the platform PMA and installed as per airframe OSIP/ECP.

ADMINISTRATIVE LEADTIME: three to six Months

PRODUCTION LEADTIME: twelve to eighteen Months

CONTRACT DATES: FY 1999: Mar-99

FY 2000: Mar-00

DELIVERY DATE: FY 1999: Apr-00

FY 2000: Apr-01

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (2007) kits	464		347		462		522		212															2,007	0.0
FY 1999 (138) kits									117		21													138	0.0
FY 2000 (44) kits										35		9												44	0.0
FY 2001 (34) kits												19		13		2								34	0.0
FY 2002 (16) kits														2		14								16	0.0
FY 2003 (16) kits																		14						16	0.0
FY 2004 (13) kits																					13			13	0.0
FY 2005 (13) kits																					13			13	0.0
To Complete () kits																								0	0.0
TOTAL	464	0.0	347	0.0	462	0.0	522	0.0	329	0.0	56	0.0	28	0.0	15	0.0	16	0.0	14	0.0	28	0.0	2,281	0.0	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In																									
Out																									

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										0
Out										0

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Structural Data Recording Set (SDRS), AN/ASH-37 (OSIP 14-92)

MODELS OF SYSTEMS AFFECTED: F-14, C-130, P-3, AH-1W, ES-3 TYPE MODIFICATION: Common Avionics Modification

DESCRIPTION/JUSTIFICATION:

Fatigue life monitoring is the only means to ensure the structural life safety and to maximize the service life of fleet aircraft. Existing fatigue monitoring systems are limited to gathering a single flight parameter, vertical acceleration or "G's". Other flight parameters (such as airspeed, altitude, roll rate, and aircraft weight) which significantly affect aircraft loading severity are not recorded but are essential to accurately characterize individual aircraft fatigue life usage and, hence, maintain the highest level of fleet structural safety. The SDRS will record the flight parameters necessary to accurately determine, track and manage the fatigue life of the aircraft and critical structural components. This OSIP procures only the SDRS airborne hardware and ground station equipment.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

The SDRS completed full scale engineering development in June 1989. Full rate production of both the airborne system and the ground station commenced in FY 1989 and is complete. Retrofit of the SDRS into the C-130 and AH-1W were completed during FY97. Incorporation into the C-2, E-2C, and F-14 is scheduled to be completed by early FY99. Technical difficulties caused slippage in starting retrofit into the P-3C and the S-3B. Validation / Verification installations and checkouts on the P-3C and S-3B were completed and the field modification program commenced in June 1998. Scheduled installation completion of the P-3 and S-3 aircraft is FY00.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Installation Kits N/R																									
Installation Equipment	877	16.7																					877	16.7	
Installation Equipment N/R		1.6																							1.6
Engineering Change Orders		0.2																							0.2
Data																									
Training Equipment																									
Support Equipment		1.0																							1.0
ILS																									
Other Support		0.9		1.0		0.3																			2.2
Interim Contractor Support																									
Installation Cost																									
Total Procurement		20.4		1.0		0.3																			21.8

Notes:

- Totals may not add due to rounding
- Asterisk indicates amount less than \$50K

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: AN/ARC-210 Electronic Protection (EP) Combination Radio (OSIP 04-94)

MODELS OF SYSTEMS AFFECTED: AH-1W, AV-8B, CH-46E, C/MH-53D/E, EA-6B, KC-130F/R/T, F/A-18C/D, UH-1N, C-130 TYPE MODIFICATION: Common Avionics Modification

DESCRIPTION/JUSTIFICATION:

The AN/ARC-210 is a combination UHF/VHF, AM/FM jam-resistant radio that was developed to allow for EP interoperability with the Air Force, Army and NATO. The radio provides dual UHF capability for CV based TACAIR; VHF AM for close air support and maritime channels; VHF AM for air traffic control; and EP capabilities using the Air Force developed waveforms (UHF-AM HAVEQUICK I and II), and the Army developed waveform (VHF-FM SINGGARS). The AN/ARC-210 can be controlled by either a remote control unit or via a MIL-STD-1553 multiplex data bus. The EP parameters and single channel preset information can be loaded via a CYZ-10 Data Transfer Device (DTD). The fill information can consist of word-of-the-day for HAVEQUICK; the KGV-10 transec variable, hopsets and frequency lock-out tables for SINGGARS. Engineering Change Proposal (ECP) 12 incorporated embedded Demand Assigned Multiple Access (DAMA) Satellite Communications (SATCOM), embedded COMSEC, embedded Variable Message Format (VMF), Link 4A, and is compatible with the memory loader verifier. ORD # 333-06-93 dated 4/20/93 validated this modification.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

The AN/ARC-210 Common OSIP provides B-kits and common logistics requirements to multiple aircraft. Individual platform OSIPs include non-recurring engineering, integration, A-kit manufacturing and unique aircraft logistic requirements. Full rate Production Decision was approved in May 1994. Corresponding platform OSIP numbers; C-2A OSIP 24-94; AH-1W OSIP 3-93; AV-8B OSIP 23-93; CH-46E OSIP 9-92; F/A-18C/D OSIP 39-92; K/C-130F/R/T OSIP 2-92; UH-1N OSIP 15-92; CH/MH-53D/E OSIP 11-92.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																	20	0.2	110	1.4	16	0.2	146	1.8	
Installation Kits N/R																		17.0						17.0	
Installation Equipment	1,129	71.4	334	17.0	345	17.8	327	17.6	250	15.0	206	14.0	186	12.9	144	9.0	142	8.7	180	11.3	210	16.8	3,453	211.5	
Installation Equipment N/R				1.3		0.5		1.0		0.1		0.1		0.1		0.1		0.1		0.1		0.1		3.6	
Engineering Change Orders		0.2		1.5		6.3																		8.0	
Data		1.0		0.8		0.8		0.8		0.8		0.3		0.2		0.1		0.4		0.4		0.4		6.0	
Training Equipment	18	1.4	2	0.1	2	0.1	12	1.3		0.0		0.0		0.0		0.0		0.0		0.0		0.0	34	3.1	
Support Equipment		6.9		1.2		0.4		0.4		0.4		0.2		0.1		0.1		0.1		0.1		0.1		10.1	
ILS		2.5		1.9		1.0		1.1		1.1		0.9		0.7		0.4		0.7		0.8		0.7		11.8	
Other Support		5.2		4.0		4.0		3.1		2.5		2.0		1.9		1.7		1.9		1.7		2.5		30.5	
Interim Contractor Support																									
Installation Cost																				20	0.8	126	5.0	146	5.8
Total Procurement		88.6		27.7		31.0		25.2		20.0		17.5		16.1		11.4		29.2		16.6		25.9		309.2	

Notes:

- Totals may not add due to rounding
- Asterisk indicates amount less than \$50K
- FY 03 and FY 04 - Common Avionics will fund the A-kit.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F/A-18C/D

MODIFICATION TITLE: AN/ARC-210 Radio (OSIP 04-94)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: _____ Contractor or USN Field Modification Team

ADMINISTRATIVE LEADTIME: _____ 3 Months

PRODUCTION LEADTIME: _____ 12 Months

CONTRACT DATES FY 1998: _____ FY 1999: _____ FY 2000: _____

DELIVERY DATE: FY 1998: _____ FY 1999: _____ FY 2000: _____

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 () kits																									
FY 2000 () kits																									
FY 2001 () kits																									
FY 2002 () kits																									
FY 2003 () kits																									
FY 2004 (20) kits																				20	0.8			20	0.8
FY 2005 (110) kits																						110	4.4	110	4.4
To Complete (16) kits																						16	0.6	16	0.6
TOTAL																				20	0.8	126	5.0	146	5.8

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In																									
Out																									

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In					5	5	5	5	126	146
Out					5	5	5	5	126	146

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: Crash Survivable Flight Incident Recorders (CSFIR) (OSIP 43-94)

MODELS OF SYSTEMS AFFECTED: AV-8B, F/A-18, VH-3D/60N, C/T-130, C-2, C-12, T-39, U/VP-3 TYPE MODIFICATION: Common Avionics Modification

DESCRIPTION/JUSTIFICATION:

Chief of Naval Operations letter, Ser N8/5U640779 of 2 May 1995, directed the CSFIR implementation policy on Naval Aircraft. This modification will provide procurement and integrated logistics support of Navy common CSFIR. The CSFIR will be a crash hardened recorder of selective aircraft systems and position parameters to be used in support of aircraft mishap and incident investigations. ORD # Ser N880G2/6U66380 and CNO Memo Ser N8/5u640779 dated 2 May 95 validate this modification.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Commercial off-the-shelf and non-developmental systems will be procured to the maximum extent feasible via open competition. Contract awarded in Fiscal Year 1998 for the F/A-18 val/ver kits with deliveries scheduled for March Fiscal Year 2000.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits	84	3.0	69	8.2			8	0.2	59	1.6	89	2.7	89	2.8	49	1.8								447	20.3
Installation Kits N/R	7	13.5		1.4	5	4.5		1.6																12	21.1
Installation Equipment	96	4.4	69		5	0.1	8	0.2	59	1.4	89	2.2	89	2.2	49	1.3					143	3.9	607	15.8	
Installation Equipment N/R		0.7				3.8		0.3																	4.8
Engineering Change Orders																									
Data		0.5		0.2		0.3		0.9		0.5															2.4
Training Equipment	2	0.1						0.3		0.4														2	0.9
Support Equipment		0.2		0.2		0.2		0.8		0.8		0.1		0.1		0.1									2.6
ILS				0.1		0.5		0.3		0.4		0.3		0.4		0.3									2.1
Other Support		0.9		1.0		1.3		1.5		2.1		1.7		1.0		2.4		1.6		0.8		0.3			14.5
Interim Contractor Support																									
Installation Cost	20	3.8	10	0.3	121	3.5			10	0.1	59	0.6	89	0.9	89	0.9	49	0.5						447	10.7
Total Procurement		27.1		11.4		14.3		6.1		7.4		7.6		7.4		6.8		2.1		0.8		4.2		95.1	

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: AV-8B, F/A-18, VH-3D/60N, C/T-130, C-2, C-12, T-39, UVP

MODIFICATION TITLE: Crash Survivable Flight Incident Recorders (CSFIR) (OSIP 43-94)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor or USN Depot field Modification Team

ADMINISTRATIVE LEADTIME: 2 Months

PRODUCTION LEADTIME: 12 Months

CONTRACT DATES FY 1998: Aug-98

FY 1999: Dec-98

FY 2000: Dec-99

DELIVERY DATE: FY 1998: Aug-98

FY 1999: Dec-99

FY 2000: Dec-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL				
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$			
FY 1998 & PY (153) kits	20	3.8	10	0.3	121	3.5			2	0.1														153	7.6		
FY 1999 (8) kits									8	0.1															8	0.1	
FY 2000 (59) kits											59	0.6													59	0.6	
FY 2001 (89) kits													89	0.9												89	0.9
FY 2002 (89) kits															89	0.9										89	0.9
FY 2003 (49) kits																	49	0.5								49	0.5
FY 2004 () kits																											
FY 2005 () kits																											
To Complete () kits																											
TOTAL	20	3.8	10	0.3	121	3.5			10	0.1	59	0.6	89	0.9	89	0.9	49	0.5							447	10.7	

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	30	30	30	30	31					4	3	3	14	15	15	15	22	22	22	23	22	22	22	23	
Out	30	30	30	30	31					4	3	3	14	15	15	15	22	22	22	23	22	22	22	23	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	12	12	12	13						447
Out	12	12	12	13						447

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: Embedded Global Positioning System / Inertial Navigation System (EGI) (OSIP 38-95)

MODELS OF SYSTEMS AFFECTED: AH-1W, EA-6B, F/A-18A/B/C/D, F-14A/B TYPE MODIFICATION: Common Avionics Modification

DESCRIPTION/JUSTIFICATION:

EGI is a Tri-Service program. EGI is a small, reliable, light weight unit which contains full Precise Position Service GPS on a single standard electronic module, plus a state-of-the-art Ring Laser Gyro inertial navigation system. A single EGI unit replaces both on inertial system such as CAINS and a GPS receiver such as the 3A or MAGR, reducing weight, volume and power consumption. EGI shall provide three navigation solutions: GPS only navigation solution, inertial navigation solution, and a blended GPS / INS navigation solution. the blended solution shall not degrade the GPS only solution, nor shall the EGI performance be degraded below the inertial only performance. ORD # 401-88-95 dated 25 May 95 validates this modification.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

EGI is a non-developmental item. Milestone III was approved in March 1994.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Installation Kits N/R																									
Installation Equipment	218	16.3	228	15.9	66	4.4	77	4.8	38	1.5	39	1.6	12		7				800	16.0	86	4.3	1,571	64.7	
Installation Equipment N/R				0.2		0.3		0.5				0.3		0.3										1.6	
Engineering Change Orders								1.1		1.0		0.6					11.9			10.8				25.3	
Data		0.4		0.2		0.2		0.2		0.1		0.1		0.1										1.3	
Training Equipment	2	0.2	1		1	0.1																	4	0.2	
Support Equipment																									
ILS		0.2		0.7		0.8		1.0		0.7		0.5		0.2		0.1		0.4		0.6				5.1	
Other Support		1.1		2.1		4.2		3.5		1.5		1.3		0.9		0.7		2.0		5.0		2.3		24.5	
Interim Contractor Support																									
Installation Cost																									
Total Procurement		18.1		19.1		9.9		11.1		4.7		4.3		1.5		0.8		14.2		32.4		6.6		122.7	

Notes:

- 1. Totals may not add due to rounding
- 2. Asterisk indicates amount less than \$50K
- 3. FY 98 through FY 01 include EA-6B quantity requirements. Kits were previously procured as F/A-18 assets. FY 02 & FY 03 are F/A-18 previously purchased assets only to be used on EA-6Bs.

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: AN/ARC-182 Reuse Modification Program (OSIP 40-95)

MODELS OF SYSTEMS AFFECTED: P-3C, S-3B, SH-2G TYPE MODIFICATION: Common Avionics Modification

DESCRIPTION/JUSTIFICATION:

The AN/ARC-182 Modification Program will utilize previously procured AN/ARC-182 systems which will become available as the AN/ARC-210 system is retrofitted into Navy aircraft. The replaced AN/ARC-182 will be upgraded to meet the configuration needs of current AN/ARC-182 users vice procurement of a new system. The AN/ARC-182 modification will include receiver-transmitter and remote control units. Mounts, filters, switching units, and antennas will be procured by the platform OSIP to complete the aircraft AN/ARC-182 configuration requirements. ORD # W0661-CC dated 13 June 78, validates this modification.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

AN/ARC-182 is in production. Modified systems will be provided GFE to user platforms to meet aircraft installation requirements.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Installation Kits N/R																									
Installation Equipment	83	0.4			2	*	3	*	32	0.1	30	0.1	21	0.1	22	0.1	39	0.1	15	*			247	0.8	
Installation Equipment N/R																									
Engineering Change Orders																									
Data		0.1																							0.1
Training Equipment																									
Support Equipment																									
ILS																									
Other Support		0.3		0.3		0.4		0.2		0.1		0.1		0.1		*		*		*					1.6
Interim Contractor Support																									
Installation Cost																									
Total Procurement		0.8		0.3		0.4		0.3		0.2		0.2		0.1		0.1		0.1		0.1				2.6	

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: Ground Proximity Warning System (GPWS CAT I) (OSIP 14-97)

MODELS OF SYSTEMS AFFECTED: KC-130T/F/R, VP-3, C-2A TYPE MODIFICATION: Common Avionics Modification

DESCRIPTION/JUSTIFICATION:

The Ground Proximity Warning System (GPWS) is a low-cost, highly reliable stand-alone commercial set built to provide reliable integration of on-board sensor data and provides an aural warning for excessive descent rate, terrain closure rate, inadvertent descent below glideslope and descent below minimum. Commercial GPWS implementation has shown a demonstrated dramatic reduction in controlled flight into terrain incidents. ECP-130-108 increases system safety by eliminating known deficiencies and applies to military application during normal and low level mission requirements. ORD # 140-05-85 dated 28 Jan 87, revalidated ORD Ltr. 96135 dated 23 Sep 96 validates this modification.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

GPWS CAT-I OPEVAL (P-3C) was successfully completed October 1993. USAF retrofitting all C-130 T/M/S with same unit as part of Autopilot Upgrade Program. USAF OPEVAL in C-130.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits			4	0.1	29	0.6	41	0.9	53	1.5	43	1.5	45	1.4	21	0.7	24	0.8	12	0.4			272	7.8	
Installation Kits N/R				0.9		0.6		1.9		3.5		1.0												7.9	
Installation Equipment			4	0.2	29	1.4	41	1.9	53	3.3	43	3.4	45	4.0	21	1.9	24	2.2	12	1.1			272	19.3	
Installation Equipment N/R																									
Engineering Change Orders																									
Data				*		0.3		0.1		0.5														1.0	
Training Equipment						0.3		0.4		1.4		0.1												2.2	
Support Equipment												0.5												0.5	
ILS						0.2		0.1		0.8		0.3		0.1		*								1.5	
Other Support				0.6		0.8		1.5		2.0		1.0		0.4		0.3		0.1		0.4				7.2	
Interim Contractor Support																									
Installation Cost					4	0.2	29	0.9	41	1.3	53	1.8	43	1.7	45	1.9	21	0.9	36	1.6			272	10.3	
Total Procurement				1.9		4.3		7.7		14.2		9.7		7.7		4.8		4.0		3.5				57.7	

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: KC-130T/F/R, VP-3, S-3B

MODIFICATION TITLE: Ground Proximity Warning System Category I (GPWS CAT I) (OSIP 14-97)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor or USN Field Modification Team

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 11 Months

CONTRACT DATES FY 1998: Dec-97 FY 1999: Dec-98 FY 2000: Dec-99

DELIVERY DATE: FY 1998: Dec-98 FY 1999: Dec-99 FY 2000: Dec-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY (33) kits					4	0.2	29	0.9																33	1.1
FY 1999 (41) kits									41	1.3														41	1.3
FY 2000 (53) kits											53	1.8												53	1.8
FY 2001 (43) kits													43	1.7										43	1.7
FY 2002 (45) kits															45	1.9								45	1.9
FY 2003 (21) kits																	21	0.9						21	0.9
FY 2004 (24) kits																				24	1.0			24	1.0
FY 2005 (12) kits																				12	0.5			12	0.5
To Complete () kits																									
TOTAL					4	0.2	29	0.9	41	1.3	53	1.8	43	1.7	45	1.9	21	0.9	24	1.0	12	0.5		272	10.3

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In				2	2	7	7	7	8	10	10	10	11	13	13	13	14	10	10	10	13	10	10	10	15
Out				2	2	7	7	7	8	10	10	10	11	13	13	13	14	10	10	10	13	10	10	10	15

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	5	5	5	6	9	9	9	9		272
Out	5	5	5	6	9	9	9	9		272

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Ground Proximity Warning System (GPWS CAT III) (OSIP 17-98)

MODELS OF SYSTEMS AFFECTED: C/MH-53, H-46 TYPE MODIFICATION: Common Avionics Modification

DESCRIPTION/JUSTIFICATION:

The Ground Proximity Warning System (GPWS), is a low-cost, highly reliable stand-alone commercial set built to provide reliable integration of on-board sensor data and provides an aural warning for excessive rate of descent, terrain closure rate, inadvertent descent below ILS glidescope and descent below minimum. Commercial GPWS implementation has demonstrated dramatic reduction in controlled flight into terrain (CFIT) accidents. NADEP CP ECP H53-004 and H46-75 will assist pilots in preventing collisions with the ground or water. ORD # 140-05-85 dated 28 Jan 87, revalidated Ser N880G2/7u660840 dated 21 May 97, validates this modification.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

GPWS CAT III completed Milestone II in July 1993. DT was fully successful in May 1996. OPEVAL was successfully completed in August 1996. Milestone III was completed in May 1997.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits					28	0.3	76	0.9	92	1.1	86	1.0	94	1.1	66	0.8	39	0.5						481	5.7
Installation Kits N/R						1.1		0.2																	1.3
Installation Equipment					** 29	1.9	76	3.5	92	4.3	86	4.1	94	4.6	66	3.3	39	2.0						482	23.7
Installation Equipment N/R						1.0		2.3		2.5		2.3													8.2
Engineering Change Orders																									
Data						0.5		0.5		0.1															1.1
Training Equipment						0.1		0.5		0.6		0.1		0.1											1.5
Support Equipment																									
ILS						0.2		0.3		0.4		0.2		0.2		0.1		0.2							1.3
Other Support						3.9		4.1		1.0		0.5		0.5		0.4		0.5			0.2				10.9
Interim Contractor Support																									
Installation Cost							28	0.5	76	1.2	92	1.5	86	1.5	94	1.7	66	1.2	39	0.7				481	8.3
Total Procurement						8.9		12.6		11.2		9.8		8.0		6.2		4.3		1.0					61.9

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. Two Asterisks indicate that one additional B-Kit was procured for software integration laboratory use in FY98.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: C/MH-53, H-46

MODIFICATION TITLE: Ground Proximity Warning System Category III (GPWS CAT III) (OSIP 17-98)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor or USN Depot Field Modification Team

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 1998: Mar-98 FY 1999: Dec-98 FY 2000: Dec-99

DELIVERY DATE: FY 1998: Jan-99 FY 1999: Dec-99 FY 2000: Dec-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL						
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$					
FY 1998 & PY (28) kits							28	0.5																28	0.5				
FY 1999 (76) kits									76	1.2															76	1.2			
FY 2000 (92) kits											92	1.5														92	1.5		
FY 2001 (86) kits													86	1.5													86	1.5	
FY 2002 (94) kits															94	1.7												94	1.7
FY 2003 (66) kits																	66	1.2										66	1.2
FY 2004 (39) kits																				39	0.7							39	0.7
FY 2005 () kits																													
To Complete () kits																													
TOTAL							28	0.5	76	1.2	92	1.5	86	1.5	94	1.7	66	1.2	39	0.7				481	8.3				

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In					7	7	7	7	17	19	20	20	23	23	23	23	21	21	22	22	23	23	24	24	
Out					7	7	7	7	17	19	20	20	23	23	23	23	21	21	22	22	23	23	24	24	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In	17	17	16	16	10	10	10	9		481
Out	17	17	16	16	10	10	10	9		481

Exhibit P-3a Individual Modification

MODIFICATION TITLE: AWW-13 PM Video Demodulator (OSIP 22-98)

MODELS OF SYSTEMS AFFECTED: F/A-18, P-3C, S-3B TYPE MODIFICATION: Common Avionics Modification

DESCRIPTION/JUSTIFICATION:
 The AWW-13 data link pod is used by the USN to provide Man-In-The-Loop weapon control for Walleye, SLAM, SLAM ER and JSOW Unitary precision guided munitions (PGM) weapons. The AWW-13 pod requires an engineering change in order to correct a deficiency identified during SLAM ER E&MD. The AWW-13 is compatible and deployed by F/A-18, P-3C, and will soon be deployed on the S-3B. ECP 9700007 enables this modification and ORD 383-88-94 validates this modification.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The AWW-13 program is post-milestone III and is an ACAT IV program. Two design iterations, flight tests, and qualification are complete and the production configuration is identified and ready for the upgrade.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits																									
Installation Kits N/R																									
Installation Equipment					200	2.1																	200	2.1	
Installation Equipment N/R						0.2																		0.2	
Engineering Change Orders																									
Data						0.1																		0.1	
Training Equipment																									
Support Equipment																									
ILS																									
Other Support						0.1																		0.1	
Interim Contractor Support																									
Installation Cost																									
Total Procurement						2.4																	200	2.4	

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: Tactical Collision Avoidance System (TCAS) (OSIP 25-98)

MODELS OF SYSTEMS AFFECTED: C-2, C-130T, VP-3, KC-130 TYPE MODIFICATION: Common Avionics Modification

DESCRIPTION/JUSTIFICATION:

CNO memorandum of 12 June 1997 directed TCAS implementation policy on Naval Aircraft. This modification will provide procurement and logistics support of a Navy common TCAS. The TCAS will provide a display of situation awareness to aid in the prevention of midair mishaps. An ECP is planned for FY 99 to incorporate this change.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

TCAS Off-The-Shelf processor has been selected. The ECP NRE effort for C-2, VP-3, and C-130T/KC-130 was accelerated and began in FY 98. Milestone III is planned for FY 00.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																									
PROCUREMENT																									
Installation Kits							9	0.3	43	1.3	49	1.5	28	0.9	14	0.5								143	4.4
Installation Kits N/R						1.4			3.4		0.4														5.2
Installation Equipment							9	1.6	43	7.7	49	8.9	28	5.2	14	2.6								143	25.9
Installation Equipment N/R																									
Engineering Change Orders																									
Data								0.1		0.7		0.3		0.4		0.1									1.5
Training Equipment								0.1	1	0.7	4	1.1	2	0.8		0.2								7	2.8
Support Equipment									0.1		0.3		0.3		0.3										1.0
ILS						0.1		0.1		0.8		0.4		0.4		0.2									1.9
Other Support						0.5		2.8		1.7		0.9		0.9		0.6		0.5							7.9
Interim Contractor Support																									
Installation Cost							4	0.1	37	1.5	48	2.0	31	1.3	23	1.0								143	5.8
Total Procurement						1.9		8.5		14.7		15.2		10.2		5.4		0.5							56.5

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: C-2,C-130T, VP-3, KC-130

MODIFICATION TITLE: Tactical Collision Avoidance System (TCAS)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: _____ Contractor or USN Field Modification Team

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 3 Months

CONTRACT DATE: FY 1998: _____ FY 1999: Dec-98 FY 2000: Dec-99

DELIVERY DATE: FY 1998: _____ FY 1999: Mar-99 FY 2000: Mar-00

(\$ in Millions)

Cost:	Prior Years		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 1998 & PY () kits																									
FY 1999 (9) kits							4	0.1	5	0.2														9	0.3
FY 2000 (43) kits									32	1.3	11	0.4											43	1.7	
FY 2001 (49) kits											37	1.5	12	0.5									49	2.0	
FY 2002 (28) kits													19	0.8	9	0.4							28	1.2	
FY 2003 (14) kits															14	0.6							14	0.6	
FY 2004 () kits																									
FY 2005 () kits																									
To Complete () kits																									
TOTAL							4	0.1	37	1.5	48	2.0	31	1.3	23	1.0							143	5.8	

Note: FY 99 \$0.0 represents a value under \$50K.

Installation Schedule

	FY 1997 & Prior	FY 1998				FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In							2	2	9	9	9	10	12	12	12	12	8	8	8	7	7	6	5	5	
Out							2	2	9	9	9	10	12	12	12	12	8	8	8	7	7	6	5	5	

	FY 2004				FY 2005				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										143
Out										143